COMPARING PLACE ATTACHMENT AND ENVIRONMENTAL ETHICS OF VISITORS AND STATE PARK EMPLOYEES IN OKLAHOMA

By

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Introduction

Throughout the recorded history of humankind, people have used *place* as an established and meaningful aspect of their culture. Cultural boundaries are dynamic boundaries held by a culture to stake claim for various cultural and survival needs. Staking claim to property is completed through a variety of means (*Fitzhugh, 2006*), including war, physical conflict, settlement, legal, and personal agreements between peaceful parties. Cultural boundaries change as various cultures and "races" move throughout the world, with various peoples defending their place of existence. Historians, geographers and other social scientists have related place directly to cultures in many contexts. Some cultures have made a significant impact and alteration to their place, such as the Ancient Egyptians with the building of the pyramids. Place has significantly impacted other cultures, as these cultures change physically, mentally, and spiritually to live within a certain place, such as Alaskan Inuit tribes as they constructed ice homes. As one might begin to ponder each culture, it is easy to realize the significant impact place has in the development and success of a culture.

One may make similar arguments for the importance various places have in the lives of the current North American culture. We modify our surroundings and develop certain places to identify "who we are." Furthermore, our culture and society transforms

to certain natural aspects of our place, modifying our culture and lives to handle natural disasters (tornadoes, hurricanes, earthquakes, etc.) and to live within the place we come to define as "ours" (living in desserts, high elevation areas, etc.). Like many groups of people throughout human history, Americans have become a culture, comprised of numerous sub-cultures. Many anthropologist and historians remark that the culture of the United States (America) is one of multiple sub-cultures in regional combinations, thus forming the American culture (Lieske, 2011, p 539). The American culture seeks to identify itself through creating places that provide meaning as well as adapting to places in efforts to become a part of that place.

In an effort to distinguish the current "American" culture from others throughout history as well as to understand the relationship our culture has with this land we marked as our own, the United States began setting aside large tracts of land for public use. In 1872, the United States Congress ordered that Yellowstone in Wyoming, Idaho, and Montana be set aside, to be a "public park or pleasuring ground for the benefit and enjoyment of the people" (National Park Service, 2011). The goals were a statement as to why "place" began to develop importance within the American culture. Congressional leaders' visions for these areas emphasized conservation, the enjoyment of future Americans, and tourism promotion (Mackintosh, B., 1999). One may see this act of the United States population to recognize the intrinsic value of certain places within our societal and cultural structure.

The United States, the American culture, has set aside many varied pieces of land in an effort to preserve lands and develop place. One has to look no further than Yellowstone, the first national park in the world, set aside with a pen stroke by United

States' President Ulysses Grant. The United States began an effort to preserve special places in our country. Some places were set aside for their aesthetic qualities such as Yellowstone or Yosemite. Other places, like Hot Springs National Park, their ability to provide recreation opportunities were primary reasons for conservation. Still, there are places in the United States that embody and enable a quasi-definition of "America." Places like Grand Canyon National Park and Arlington National Cemetery emerge as significant symbols of American culture. Place is, or places are working symbols of the United States American culture.

The continual progression of conservation efforts through various outlets in the United States lends credence to the role place has in American culture. The Division of Forestry, later named the United States Forest Service, began in 1881 to withdraw lands from the public domain to be managed with a conservation mandate (Steen, 2004). The National Park Service began in 1916 to help manage various lands set aside by political leaders. The state of Illinois began a state park system in 1908 (For Massac, 2011) and California in 1928(Areias, 2001). Many other states began state park systems as the importance of these places emerged in the life of every citizen, people wanted to visit these unique places.

Oklahoma's state park system began in the 1930s with various lands set aside from public and private entities. The formation of the Civilian Conservation Corps (CCC) in 1933 (Smith, 1992) helped initiate and facilitate plans to build state parks throughout the United States. Oklahoma benefitted from the CCC in that it provided labor to develop the Oklahoma State Parks system. With the Oklahoma legislature initiating the Oklahoma State Park system in 1935 (Caneday & Jordan, 2003), Oklahoma mirrored the national

sustained drive toward preserving and conserving natural resources: land tracts that held significant value to the citizenry.

> "Resources are not only raw materials to be inventoried and molded into recreation opportunity, but also, and more important, places with histories, places that people care about, places that for many people embody a sense of belonging and purpose that give meaning to life" (Williams, Patterson, Roggenbuck, and Watson, 1992).

The designation and conservation of special places is a concept that America embraced from the mid-1800s to the mid-1900s. Setting aside lands at the local, state, regional, and national levels was a direct result to American's request to preserve and conserve places considered unique and special in a variety of aspects.

Throughout the young history of the United States, place has become an important aspect of our culture, signaling how the culture of this country identifies itself through various places as well as our dependence and need of such places. The question one may pose is how does a culture distinguish such places? How does a culture decide or progress toward certain places being of high enough value within that culture to conserve or preserve that place? Carl Sauer, an American geographer, had a change of philosophy during a field observation that is foundational in concept. Upon graduating from the University of Chicago in 1915, Sauer continued the widely accepted theory that the environment was responsible for the development of cultures and societies. That philosophy changed after he witnessed the destruction of Michigan's Lower Peninsula pine forest. Sauer then countered the widely held belief of environmental determinism, stating that humans control nature and develop their cultures out of that control (Briney, 2010).In early place research, place was originally thought to have one fundamental feature that distinguished itself from other geographical locations; that distinguishing

feature is experience (Tuan, 1974). Experiences one has within a set of geographical boundaries may lead to a concept of place.

While place initialized and began as a historical movement in the thought of conservation, only recently has the study of "place" come under scrutinized inspection. Tuan (1972), Relph (1976), and Lee (1972) began examining the concept of place with more scrutiny and developed various operational definitions that spurred a movement of research into the psychological connection to place. Tuan's description of place as a center of meaning constructed by experience, "what begins as undifferentiated space becomes place as we get to know it better and endow it with value" (1974). Tuan goes on to describe place attachment as an emotional or affective bond, between a person and a place, a dynamic bond that moves from a shallow amusement to a deep connection to place (Tuan, 1977).

Relph (1976) stated three primary aspects of place: meanings, activities, and physical settings. The physical settings of a place may be the aesthetic value or the value of the land for the availability of the place to allow for specific experiences. Activities, experiences that may include emotions before, during and after the activity, range from docile and passive to active and aggressive. One may differentiate the types of activities that happen in their relation to place. Meanings are values humans place on the area that may have roots in ethics, virtues, or knowledge of the area. Place results from the interaction of these three components; how each of these components relate and interact with the others dictates how a place moves from a geographical location with boundaries, to a vital and important aspect of a culture (Gustafson, 2000). Tuan (1977) suggests that

meaning, of the three suggested aspects of place, is most likely the feature that is more difficult to understand and measure when compared to physical setting and activities.

Interpersonal relationships as well as relationships with place are tied with the same strength of bond as seen in the past (Meyrowitz, 1985) and the information and communication technologies are allowing these relationships to be unsteady (Hay, 1998). Relph (1976) also argued that people are losing their sense of place, their attachment to authentic places, places that reflect social and cultural characteristics and values.

> "Meanings of place are an important issue in social science today. Arguments about modernity, post-modernity, globalization and the 'information society' often claim that the role of space and places in contemporary society is undergoing fundamental change" (Gustafson, 2000).

Recent social science research related to place augments past place research by investigating the phenomenon of place to the relationship that place has to economics (Hailu, Boxall, & McFarlane, 2005), behavior motivation (Kyle, Mowen, & Tarrant, 2004), sense of community (Pretty, Chipeur, & Bramston, 2003), and social and environmental concerns (Kyle, Graefe, Manning, & Bacon, 2004). Environmental concern has roots in early American culture.

Environmental concern has American roots in a variety of forms. In its infancy during the early 1800s, various pioneers in land ethics and relationships with nature began attaining popularity with the American citizenry. Thoreau (1817-1862) opened various mediums for nature-based conversations and the relationship one can or may have with the environment. Although his famous book, *Walden; or, Life in the Woods* gained public acclaim after his death, it emphasized a distinct and intimate relationship with nature. The American concept of Manifest Destiny, a perception of unlimited

availability of natural resources that seemed to be embedded in U.S. culture, began changing with the presidency of Roosevelt. A rapid transformation in legislation and ethic related to land use and conservation began during Roosevelt's presidential tenure. Gifford Pinchot, the first director of the United States Forest Service, was not alone in his sustainable utilitarian use of the natural resources. While such a concept was a rapid shift away from the unmanaged and unlimited use of the natural resources that preceded such limited use policies, an American change was, underway that went further in preserving places held dear in American culture.

John Muir, Aldo Leopold, and Rachel Carson, also aided in the transformation of the American mindset, helping shift American thought from a Utilitarian to an Environmental ethic related to land use. Using various tactics of writing, oration, and public demonstrations, the world witnessed an incredible change in the United States as the government reflected a notion of the people to preserve and protect places from incurring irreversible damage from overuse. Muir's fight for the Hetch Hetchy Valley, Leopold's *Sand County Almanac* (1978), and Carson's *Silent Spring* (2002), helped spur a movement to go further in protecting places in the United States. Not only were Americans concerned about setting aside various land masses as special places, there was growing concern about how people and business mistreated land and nature.

The growing concern of how citizens treated nature led to scholars such as Bengston (1994) to state that another important factor in the new managerial practices is a result of what is not completely or easily understood; the increased value society has placed on natural resources. Various people in roles of management and protection of various natural places are now beginning to understand impacts of various activities and

management practices. Franklin (1989) noted that ecologists have begun to recognize that management does not sufficiently understand the entirety of the changes and damaged to ecosystems that result from certain practices such as sustainable timber yield and various mining and grazing operatives. These values no longer adhere to the utilitarian concepts of sustained use or sustained yield, but may be closely associated with preservation instead of conservation. This shift away from a utilitarian mindset to an environmental concern underscores the importance of understanding the changing meanings natural places have in the American culture.

Managers and administrators of various natural resource areas may be varied in environmental ethic philosophy, but typically manage these resources in similar management styles. Management practices employed, however, are not always reflective of popular thought, highlighting a disconnection of environmental philosophy between management and visitors. While science and mainstream media has aided in the public understanding of land management practices, early efforts by Muir, Leopold, and Carson, (among many others) has defined a special place in the mind of Americans that our culture is not extending our efforts to optimal conservation lengths. Personnel charged with managing various parcels must contend with policies that affect land differently, with varied approaches being shaped by a multitude of missions and visions for long-term use as well as short-term popular and political pushes from external forces.

Managers of such places have instilled specific land management policies, such policies do not always lend well to aiding in the decision making process when considering alteration of the natural resource or policies affecting the use of the natural resource. Such managerial decisions are often based on written or unwritten codes of

conduct related to every decision associated with the use of a place. Management decisions related to budget and political forces result in a myriad of issues that managers must consider within their management philosophy. Local pressures from a variety of individuals and entities demanding an assortment of values and philosophies that are also considered may hinder any decision and result in difficult decisions for land managers. Political pressures to maximize budget for local municipalities have forced local park directors to consider allowing non-government entities to manage outdoor recreation areas (O'Bannon, 2011).

Statement of the Problem

Growing environmental concerns (Nidumolu, Prahalad, & Rangaswami, 2009), the transformation of place attachment, and the apparent difference in personal philosophies between management and user groups (Petrosillo, Zurlini, Corliano, Zaccarelli, & Dadamo, 2007) all highlight a need to continue to understand the status of place attachment and environmental concern within various groups.

Previous scholarly research relating place attachment and environmental ethics is selective and limited. Research inquiry of place attachment and environmental ethics in Oklahoma is sparse. The purpose of this study is to examine the place attachment and environmental ethics of the adult users and management of three state parks and one nature park in Oklahoma. Furthermore, the researcher seeks to further understanding concerning differences that may exist between the management and user populations.

The physical geography of Oklahoma may affect various levels of attachment and environmental ethic, depending on location, and factors such as park amenities, demographic makeup of park users and staff. While understanding place attachment and

ethics of a specific park or land area is beneficial, it does not yield results needed to make decisions on a larger scale within the framework of an entire state park system. With no way to compare various tracts of land, the lack of information forces the various administrators to rely on other information sources when considering finances, land management, and policy development. These information sources include research that is conducted in natural places not in Oklahoma, management suggestions from a variety of non-professional sources, and an array of other non-professional materials. A minimal number of research projects have inquired and investigated place attachment and ethics in recreation places in Oklahoma, none have broadened their scope and developed a study that included more than one public recreation area. All place related research in Oklahoma focuses on a single land management areas such as a specific state park, wilderness, wildlife refuge, or recreation property (Fink, 2011; McAuley, 1998). In that Oklahoma is one of the most geographically diverse states in the continental United States (Jacobi, 2010), it is useful to develop a systematic research study that allows the researcher to understand more areas that just one. The concept of conducting research at multiple sites, three state parks and one nature park, is beneficial in that it allows place attachment and environment ethics comparisons of user and management groups between specific sites, regions/areas, demographics, and other salient factors.

As stated, after a full investigation, no research is in place or has been published that aids in understanding the differences between user(s) and land manager(s). Understanding the user and employee levels of place attachment and types of personal ethics involved with these two populations is important to consider when making decisions related to resource management, finances, policy, and other arising issues.

Having such knowledge will aid in the preparation of various curricula and programing in such a way to help managers and recreationists better understand the decisions and policies in place and in practice.

Rationale for the Study

In 2011, the Oklahoma Tourism and Recreation Department (OTRD) considered closing several state parks scattered across the state (Canfield, 2011). Moreover, states across the nation are considering similar actions in efforts to meet budget restraints as well as direct resources to parks and areas where resources are desperately needed (Mitchell, 2010). Administration cites budget issues as to the reason seeking such actions is necessary. Administration also states that parks chosen were selected due to having the least significance to Oklahoma residents in a variety of aspects. To discuss such actions might lead to unending reasoning and debate. Understanding the connection Oklahomans have to their environment and selected places might aid in making future decisions related to certain land and place management.

The United States private land holding is close to 60%, with the federal government holding 28%, state and local governments holding 9%, and various Native American Tribes holding roughly 2%. The state of Oklahoma has drastically different land holding percentages when compared to the national index. Within Oklahoma, the federal government holds 2.94%, the state 2.56%, local governments 0.06%, tribal lands 3.17%, private holdings are at 90.2%, and water surface area makes up 1.07% of the total land area (Caneday, Jordan, Brown, San Diego, Smith, & Fink, 2007). The difference in public domain land in Oklahoma requires the government and populace to understand that, in Oklahoma, there is less overall acreage of public land available for various

pursuits, recreation or otherwise. In that the researcher will use four regional research sites to represent Oklahoma's state parks, certain region representatives may differ in levels of attachment and environmental ethics. Understanding what these places mean to the Oklahoma citizenry will be a new and challenging task.

Place meaning and place attachment research in Oklahoma is limited and narrow, not allowing for a complete understanding of what various places mean to residents. Not to diminish the quality and importance of past place research within Oklahoma, no study completely envelopes the ideas and concepts needed to understand Oklahoman's attachment to places to any useful extent. Understanding the meaning of the parks as places of importance related to the recreation and leisure pursuits of the users may aid the management of the state parks in Oklahoma in their decision process to close or reduce the number of parks. Furthermore, understanding Oklahoma place attachment and environmental ethic might aid administrators in their management of lands that are used at different impact levels. It allows one to broaden the scope of how administration manages such lands and signals a larger problem. How does the Oklahoma Tourism and Recreation Department manage such lands without accurate and thorough knowledge of what these places mean to the residents in the state?

The political maneuvering of shuffling funds and resources from one area to another diverts the attention of Oklahoma legislative and administrative personnel. The Oklahoma government is without a concise understanding of Oklahoma residents' place meaning of these various parks because no research study has been able to compare several state parks with a single instrument. Park management needs as much knowledge as possible to facilitate a comprehensive decision making process. The information aids

in the understanding of what these various places mean to visitors allows the park management to consider such information in park decisions. Oklahoma is not alone in their quest to meet various demands from the public and political sectors related to proper spending and systematic dispersion of financial resources. This leads one to consider that various management personnel could have much more information readily available to justify financial needs when competing with other state departments for such finances. This research study aids in the goal of gathering information to secure funding.

There is, however, a major issue related to this in that such information may not exist or be readily available. To ask such land managing agencies and personnel to consider all the various impacts on the resource and visiting population, there has to be such information to aid the decision making process. How often, in the case for state parks across the nation, is such information available? If there is data available, is such information recent and broad enough in scope that one may use it as a defense of various actions related to land management? This issue is not that the Oklahoma Tourism and Recreation Department seeks to make various decisions regarding the use, or non-use, of such land without a breadth of knowledge regarding impacts and implications. The issue is this information, where it does exist, may not expand to broad enough bases to be effective as a source of knowledge. When considering all impacts to natural resources, one must also consider the environment and how users and resource managers utilize the natural resource.

Environmental Ethics

The United States, Oklahoma included, seeks to move "green." The eco-friendly movement, sometimes dubbed the "Green Movement," seeks all opportunities in personal

and professional settings to change practices to find a better accord with nature. The movement's philosophy tends to focus on replacing current strategies, policies, and physical items with things that do less to alter or damage the environment.

Personal and professional green practices are varied and growing in number. The leaders in these sectors believe that green practices not only save money, but also attracts more business (Keller, 2009). Business leaders understand the value in knowing their clientele and acting in accordance to the values of current and potential clients. As the overall understanding of ecology and impacts of various activities increases in the minds of Americans, innumerable businesses must take notice and begin the process of change as well. Various parks and recreation agencies are also involving more green practices into their management and operations. Many parks participate actively in conducting everyday business with green activities. These activities include things such as going paperless to reduce the use of everyday printing (Greene, 2010), providing recycling centers throughout park areas (Downing, 2011), and engaging youth in education related to acting in ways to reduce human impact (Kurbjun, 2011). Parks maintenance crews are reducing the number of new items purchased by fixing older items or altering existing materials for use (T. Presley, personal communication, November 17, 2011).

Past environmentalists, those supporting various environmental friendly movements may have had an effect, as the idea of lessening environmental impact in the United States is gaining in popularity (Lutz, 2010). Perhaps it is due to a philosophy in vogue, or perhaps a better understanding of the impacts each individual has on the environment. No matter the situation, more people are showing interest in lessening their

impact and striving for an understanding and working knowledge of the environment (Lynes & Andrachuck, 2008; Jewani, 2011).

In efforts to reduce individual impacts on the environment, many people are acting out a completely different life philosophy. No longer a mantra of manifest destiny or utilitarian ethic, people are responding to various situations and issues by first considering the effects of decisions related to the environment (Jewani, 2011). Parting ways from Pinchot's and Roosevelt's philosophy of using resources, to benefit the most good if necessary, Muir's philosophy of preservation is gaining popularity. Environmental ethics, or perhaps an ethic of sustainable living, requires individuals, businesses, and the government to reconsider every facet of their daily personal and professional operations.

One must look no further than an academic or public search to notice a large disparity in the environmental ethics and place attachment research completed in Oklahoma in comparison to other states. As stated previously, this is no effort to criticize previous and ongoing research in Oklahoma related to place attachment and environmental ethics. This is an argument to supplement and complement those labors and continue the efforts put forth by the few individuals working in this field of study. While many research projects through various venues seek to understand place attachment, very few of these research projects also consider environmental ethics or similar areas of research. Similar studies discuss civic action (Payton, Fulton, & Anderson, 2007), environmental values and landscape meanings (Brandenburg & Carroll, 2008), social environmental conditions (Kyle, Graefe, Manning & Bacon, 2004), and property attitudes (Jorgensen & Stedman, 2002). The dearth of research focused on place

attachment and environmental ethics results in minimal information that may of use to managers and users of these public lands. In a recent State Park Visitors study, Caneday and Jordan (2003) also surveyed state park employees at various levels. There are some contradictions in philosophy between management of the parks and administration of the entire division, but what is more concerning is the disconnection between ideas of how personnel should manage the natural areas. For instance, management cited visitors' high levels of satisfaction of the programming and facilities as being demarcated by the fact that staff employment was secure (Caneday & Jordan, 2003a). Visitor's reported satisfaction with programming and facilities within the state park system (Caneday & Jordan, 2003a).

Therein lays a problem in that if the administration, management, and user groups seek to make informed and wise decisions, they need as many resources that may be available. The most important resource in making judgments related to land use is the opinions of those who manage and use that land. While managers are certainly there, in place, to act in the best interest of the users, they must also take into account the best interest when considering the sustainability of the activity within their parks (Olive & Marion, 2009). Managers are often dealt the difficult task of understanding the needs and wants of the park users while attempting to manage the resources in a way that may not reduce the longevity of the activity or be destructive to the resource (de Groot, Alkemade, Braat, Hein, & Willemen, 2010; Gavin, Solomon, & Blank, 2010). Managers of public lands used for recreation have few resources of decent quality to help in their efforts to make accurate, articulate, and wise decisions to aid in making the best choices for the land use. Past research has yielded fragments of information that is useful, but we do not

completely understand the status of environmental ethics of the users of Oklahoma state parks.

Environmental ethics may influence place attachment (Brown, Reed, & Harris, 2002). Place attachment may affect the environmental ethics of a user or user groups (Brown, Reed, & Harris, 2002). There may or may not be differences, when discussing environmental ethics and place attachment, between various management personnel and users of the land. It is important to push toward a complete understanding so that managers and administrators may make the best decisions related to land management issues.

Research Objectives

There are two primary research objectives:

1. To examine the relationship between place attachment and environmental ethics of state parks visitors and employees in Oklahoma.
2. To examine the differences that may exist among recreational users of various state parks and state park land management personnel concerning place attachment, environmental ethics, and the place attachment-environmental ethics relationship.
3. To compare the levels of place attachment and environmental ethics of state park users and state park employees.

For this study, the researcher shall use two different instruments to seek respondent input related to place attachment and environmental ethics. The instrument, quantitative in essence, is a questionnaire in three sections. The author has dedicated each section to one of the following areas: place attachment, environmental ethics, and demographic information.

The researcher poses the research questions for this study in two categories: Place Attachment and Environmental Ethics. In conclusion, of each research question the researcher identifies the null hypothesis (H_0) and alternate hypothesis (H_A).

Place Attachment Research Questions

1. What is the status of place attachment of visitors and employees at Oklahoma's state parks?

   H_0: There is no difference in place attachment between Oklahoma state parks visitors and employees.

   H_A: The levels of place attachment of visitors at Oklahoma's state parks is significantly different than place attachment reported by employees of Oklahoma State Parks.

2. Is the level of place attachment influenced by demographic variables?

   H_0: Demographic variables do not influence place attachment, as measured by standard demographic questions.

   H_A: There are certain demographic variables that have greater influence on place attachment, as measured by standard demographic variables.

3. Is the level of place attachment influenced by respondent's environmental ethics status?

   H_0: Place attachment of Oklahoma state park visitors and employees is not influenced by measured independent variables related to environmental ethics.

   H_A: Certain independent environmental ethic variables have more influence on a respondent's place attachment, as measured by the revised New

Ecological Paradigm (Dunlap, Van Liere, Mertig, & Jones, 2003) and the Place Attachment model by Williams and Vaske (2000).

4. Does one of the sub-dimensions of place attachment, place identity or place dependence, have greater influence on environmental ethics when compared to the other?

   H_0: There are no sub-dimensions within place attachment that may exert greater influence on environmental ethics when compared to the other sub-dimension.

   H_A: One of the sub-dimensions of place attachment exerts significantly greater influence on environmental ethics when compared to the other sub-dimension of place attachment.

Environmental Ethics Research Questions

1. What is the status of environmental ethics of visitors and employees at Oklahoma's state parks?

   H_0: There is no difference in environmental ethics between Oklahoma state parks visitors and employees.

   H_A: Oklahoma state park visitors current status of environmental ethics is not equal to state park employees.

2. Is the level of environmental ethics influenced by demographic variables?

   H_0: The influence that demographic variables have on environmental ethics is not as significant when compared to respondents of similar studies.

   H_A: There are certain demographic variables that have greater influence on environmental ethics, as measured by standard demographic variables.

3. Is the level of environmental ethics influenced by respondent‘s place attachment?

   H_0: There is no difference in the influence place attachment has on environmental ethics between Oklahoma state parks visitors and employees.

   H_A: The level of environmental ethics changes as the level of place attachment changes.

Operational Definitions of Key Terms

Place – A result of the relationship between actions, conceptions and physical attributes (Gustafson, 2001).

Place Attachment – a psychological or perceived unity of the geographical environment as a center of meaning constructed by experience (Russell & Ward, 1982; Tuan, 1977).

Place Identity – the symbolic importance of a place as a repository for emotions and relationships that give meaning and purpose to life (Williams & Roggenbuck, 1989).

Place Dependence – the importance of a place in providing features and conditions that support specific goals or desired activities (Stokols & Shumaker, 1981).

Leisure – a self-determined action with primary meaning contained within the experience (Kelley & Godbey, 1992).

Environmental Ethics - a philosophical stance in which ethical consideration is extended to beings beyond humans, such as plants, animals, ecosystems, etc. (Moriarty, undated).

Environmental Concern – thoughts and actions related to the environment driven by biospheric, egoistic, or altruistic motives (Milfont, Duckitt, & Cameron, 2006)

Environmental Values – an enduring concept of the preferable way to interact with the natural resource, of which influences choice and action related to the environment and ecosystems (Driver, Brown, & Peterson, 1991).

User – Any person that visits a state park for day use or for overnight use that is not an employee of the state park system.

Employee – Any person that works, in any capacity, as a state park employee. This includes volunteers, interns, operational staff, managerial staff, and many other occupational names of those working in or for the state park system.

Assumptions of the Study

1. All participants within the study respond in good faith, with honesty and sincerity.
2. The researcher assures anonymity to all respondents.
3. The quantitative methods used in this study, aid in the complete understanding of the status of place attachment, environmental ethics, and demographics of the participants.

Limitations of the Study

1. A select sample of users and employees that are visitors or employees of Oklahoma state parks. The researcher will not solicit Non-users and vendors to participate in the research.
2. The study will examine any possible relationship or correlations between place attachment, environmental ethics, and select demographics. Unknown and unused variables will not be included in this study.
3. The study will only examine users and employees 18 years of age and older.

4. The researcher has selected only four Oklahoma state parks as research sites for this study.
5. The researcher will only collect data during the year 2011.

Throughout the research study process, limitations and delimitations were present. The sampled population of the study included only state park visitors, eliminating non-visitors from the potential respondent pool. Furthermore, since the researcher selected only four research sites, eliminating visitors at all other potential research sites that were visiting those parks throughout the research timeframe. Due to the timing of the research study, the researcher collected data October through January, eliminating all state park visitors that visit the research sites during the remaining of the year. Significant visitation to these research sites happens from late spring into mid-fall each year, and thus the researcher was not able to collect data during peak visitation times.

The researcher acknowledges these limitations and thus believes results might have yielded different findings if more research sites were included, research was collected throughout and entire calendar year and non-visitors were included in the research process. Due to the limitations, findings are not generalizable to any areas outside Oklahoma and findings do not represent non-visitors within Oklahoma.

The instruments used to measure place attachment (Williams & Vaske, 2003) and environmental ethics (Dunlap, Van Liere, Mertig, & Jones, 2000) yielded specific results as measured by these specific instruments. Findings represent place attachment and environmental ethics of research participants as measured by these instruments and thus,

measurements of place attachment and environmental ethics might be different using other instrumentation.

A specific limitation to consider is that all surveys conducted were self-response, in that the respondent's freely choose which answer best represented their concept of how they were attached to place and how they were situated within environmental ethics. Research findings might be different if the responses to the survey were not self-selected and based upon some other criteria, perhaps actions related to their use of the natural resource.

The researcher conducted the survey in a face-to-face manner, approaching potential research subjects on-site throughout the daylight hours. This type of research protocol involved intrusion of the privacy and time of all potential research respondents, and more so for those that agreed to participate. While the researcher had many participants that were agreeable and enjoyed the experience, most of the rejections were stated to have been due to lack of time due to other obligations and simply wanting "to be left alone" for the time being.

Significance of this Study

Understanding how users and employees see a geographic place as being part of their identity (place identity) as well as being dependent on a certain place for specific activity (place dependence) is important as administration seeks to make decisions regarding land management. The place attachment of users is important in that it provides insight as to the user's acceptance or reluctance to certain managerial activity. Understanding how employees attach to place offers insight as to the differences that may exist between users and employees. This is valuable in that it provides awareness of

differences that management personnel must overcome through various means so that proper land management may take place. Understanding the differences of personal values and views allows for better communication between selected parties or individuals (Andreoni & Rao, 2011).

The status of environmental ethics of users and employees within the state park system is unknown at this time. Past researchers have not attained enough data to remark on the actual current environmental ethics of researcher respondents. Various current research projects are in initial stages or recently concluded, and are either unavailable or unusable. An initial account of the status of users and employees current level of environmental ethics may provide various administration and researchers with a foundation by which to mark changes in individual environmental ethics. Such information may also aid in educational efforts. The state park system, along with a myriad of other nature and environmental based organizations offer various programs aimed at enhancing environmental awareness and values through education. Their labors, coupled with a better understanding of current environmental attitudes, may help focus programming and education efforts.

Investigating the relationship between place attachment and environmental ethics is nothing novel or new. In the past, research projects in other states have surfaced an enormous amount of information that has aided in a wide range of research, education, and communication projects (Barcus & Brunn, 2010; Hernandez, Martin, Ruiz, & Hidalgo, 2010). While various research has produced mixed results as to the type of relationship between these two theory models, much research has identified each as influential indicators when discussing managerial processes and behaviors of various

individuals. Thus, understanding place attachment and environmental ethics of Oklahoma state parks users and employees may produce a host of benefits to a variety of people and groups.

Chapter Summary

This chapter introduced the current issues of the lack of understanding the status of place attachment and environmental ethics as they relate to users and employees of Oklahoma's state parks. The central mission to this study is to understand the status of users and employees in the areas of place attachment and environmental ethics to aid in the administration in its management of natural resources in a variety of ways. Through specific research questions, the researcher hopes to attain a better understanding of place attachment and environmental ethics of users and employees in Oklahoma state parks. In addition, the researcher hopes to better understand and increase in the ability to facilitate methods employed to solicit the information from the participants. The literature review and the primary research questions allowed for the focus of this research.

The author has organized this dissertation into five chapters. The first chapter provides a brief introduction to the topic and introduces the research's focus issues. Chapter two will highlight the findings within relevant literature related to place attachment, environmental ethics, state parks research, Oklahoma's state parks research, and visual qualitative methods. The purpose of Chapter two is to navigate through the theoretical foundation for the entire study. Chapter three will describe the methods used to gather data from subjects and the study settings. Chapter four will include all research results. To conclude, chapter five will discuss the research results, discuss any relevant

information as outcomes of the research, and potentially make recommendations and suggestions related to the study area and methods of research.

Chapter II

Review of Literature

Many researchers have conducted studies related to place attachment and environmental ethics. These studies range in purpose, focus, and findings. This chapter includes an overview of research relevant to this research study, including place attachment, place attachment sub-dimensions, environmental ethics, and information related to the state park sites selected for this study.

Place Attachment

Place attachment, or as referred to in some contexts as sense of place, is the emotional and physical connection between a person and a place. In attempting to describe the place attachment phenomenon, Tuan (1974) describes place as a center of meaning, relating to the experiences one has within, at, or related to a specific place. Sense of place, as described by Russell and Ward (1982), is the psychological or perceived unity of a person and the geographical environment. Place attachment is the bond between a person and an environment, be it a geographically defined environment or an environment defined within ideas and mind of self.

Although the study of place attachment is relatively new when contrasting the concept with other geographical and psychological theories and concepts, the area of study has yielded quite a range of definitions and thoughts. Academics and professionals

alike have strengthened the concept by utilizing the place attachment concept in various fields of study. The ability to cross the boundaries of fields of study and the flexibility to be associated with various concepts and definitions allow the concept of place attachment to be of much importance to many individuals in varied areas of study and interest. Low and Altman (1992) might have stated it best when discussing place attachment origins as being varied and difficult to distinguish.

There seems no common agreement of terms and language used to describe the concept most know as place attachment. The concept, geography beginnings, ranges in name and theoretical makeup within other academic disciplines. Kasarda and Janowitz (1974) discuss a concept of community attachment when describing individuals' emotional bond to the concept of community, a social human group where members share a specified space, and often have common cultural and historical norms. In recent research, Hummon (1992) describes "sense of place" as the broader concept of place attachment. Many consider place attachment as a core aspect of sense of place.

The concept of attachment, the desire to maintain closeness to the object of attachment (Rholes & Simpson, 1997, p. 170), surfaces the idea that a person or persons may form such attachments to things other than humans. Attachments to material objects (toys, heirlooms, collectibles, etc.) are common, as are attachments to ideas, routines, and emotions/feelings (Relph, 1976).

Tuan (1974) described "place" as a center of meaning constructed by personal experiences. Tuan describes the different of space and place as a movement from space to place as a person or individual associates meaning of some sort to a particular geographic location. In this definition, space becomes place. Tuan goes on to discuss place as the

emotional or affective bond between an individual and a specific place. That bond, like other emotional bonds is dynamic in nature, ranging in intensity and meaning to the individual. In later research, Tuan (1980) makes note that the person-place bond depends on length and depth of a person's experiences within the setting. Note thatTuan stays clear, in this instance, from associating place too closely with geographical location. Tuan describes the social relationships with the physical setting needed to develop a sense of place rather than the physical space becoming place.

Relph (1976) describes place as a physical setting, being more specific in defining place. Relph describes place as a concept where human activities and human social and psychological processes take place within a physical setting. Relph further states that "place attachment" requires a person to show care and concern for the place. One might deduce that such a strong attachment to a place would most likely lead to an individual with strong attachment to oppose any type of degradation to that place or environment. Relph also describes a concept of placelessness, the concept that involves a person lacking sense of place and the abundance of unauthentic physical environments. placelessness.

There is research that explores the formulation of place attachment beyond the specific and direct interaction of individual and geographic space. In agreement with Tuan, Lagopoulus (1993) and Aitken (1991) consider place a social construction formed by specific interaction between individuals and contexts. Proshansky (1983) and Shamai (1991) each worked toward a definition of place attachment without a stringent focus of an individual's direct contact. The concept of place attachment might imply an individual's identification with a place either emotionally or symbolically. Shamai (1991)

states, again, that place is a socially constructed space, a location that the visitor has attributed meaning. Saegert and Winkel (1990) state that places are developed and inherit meaning only when humans act as social agents who pursue and develop various meanings within their physical, and perhaps otherwise, environments.

Low and Altman (1992) describe place attachment in a succinct effort, the human bonding to the physical environment. The two researchers push further in stating that place attachment is a complex and integrated concept containing a multitude of interrelated and inseparable concepts. Giuliani and Feldman (1993) describe place attachment as a positive connection or bond between a person and a particular place. Grieder and Garkovich (1994) put forth an idea of the symbolic meanings of settings and how such meaning influence human interactions. Williams & Vaske (2003) describe place attachment as the emotional or affective bond between humans and recreation sites.

Although there seems to be a multitude of definitions and variations as to the concept of place, the concept by Williams and Vaske (2003) encompasses what most theorists and practitioners use in parks and recreation research. Place attachment is varied in that it relies on the physical dependence of a person on a place and the emotional or affective attachment of a person to a place. It is common that place attachment is divided into two dimensions. Past research has found that place attachment has at least two sub-dimensions: place identity and place dependence.

Place Identity

Proshansky (1978) describes place identity as the dimensions of self that define the individual's personal identity in relation to the physical environment. Korpela (1989) argues that the environment (place) serves as a regulating body and a means of creating

and maintaining one's self. Cuba and Hummon (1993) describe place identity as the aspects of place attachment that allows an individual or individuals to communicate qualities of the self to self or other. Places may be integrally involved in the construction of both personal and social identities. As places are an important aspect of every part of an individual's personal and social worlds throughout their daily life, such places become important mechanisms to create meaning and identification of self (Weigert, 1986).

Place identity may be an issue of having shared interest and values (Relph, 1976), or perhaps a shared sense of an emotional bond of "feeling at home," being comfortable in a place (Rowles, 1983). Comfort and familiarity might allow an individual to relax and be ones' self, as Seamon (1979) describes as being "really me." One may deduce that place identity, perhaps, is an aspect harder to define than understand. Place identity, throughout various scholarly works, comes across in two forms. The idea that society may use place to define a person and the concept of a person using a place to define oneself, are both viewed equally important in the various realms and areas of study within and about place attachment.

Proshansky (1983) defines place identity as an individual's awareness and perception of the world as represented by a collection of memories, conceptions, interpretations, and feeling about specific physical settings and similar setting types. Proshansky was the first research to take an important step in the direction of directly stating, what may seem obvious, that place identity is one of many aspects that may contribute to an individual's self-identity. Ittelson (1976) echoed the idea in stating that "people often experience the environment as an important part of themselves, as an integral component of self-identity." Ittelson (1976) goes on to describe a unique

perspective by stating that detachment between an individual and place may change the person's self-identity altogether.

Tuan (1974) first discussed the lack of a physical attachment for place identity to be in place in a person's life. The possibility existed, Tuan noted, that a person may develop an emotional or symbolic bond to a place without ever actually visiting the specific place. Relph (1976) showed support for Tuan's assertion stating that people may vicariously experience a place and develop a deep sense of involvement. This vicarious interaction may be an attachment to something other than the physical geography itself, moving more toward attachment to an aspect of the geographical space. In his writing, he makes an example of the attachment to an idea of national heritage. That attachment to the idea of national heritage may bring a person to feel an emotional bond to places he or she have never seen or visited.

The idea of disconnection from the physical environment, Relph (1976) uses the word placelessness, also has merit in the place attachment discussion. Meyrowitz (1985) argues that as information and communication technologies improve and are enhanced for the individual in society, personal relationships become less stable and attachments to other people and place wane.

Place Dependence

Place dependence may be viewed as the functional aspect of place attachment (Snider, Hill, Luo, Buerger, & Herstine, 2011). To summarize, place identity, is stated as the bond between an individual and place as something of an emotionally constructed concept (Lai & Kreuter, 2012). Place dependence's focus is on the fulfillment of personal endeavors through the use of the space (Lockocz, Ryan, & Sadler, 2011). Place

dependence may be discussed as the functional aspect of place attachment, whereas place identity is the emotional or symbolic aspect (Trentelman, 2009; Scannell & Gifford, 2010; Wright, 2009; & Lewicka, 2011).

Williams and Roggenbuck (1989) describe place dependence as the use of a resource to satisfy a need or a goal. In various settings, the need or goal may change. The individual or societal dependence on a natural resource is important as it allows for an idea of usability of that resource by people. Resources are sometimes exhausted or do not provide adequate systems to provide success in need or goal fulfillment. Understanding the aspects of the resource and the various components of place dependence might allow for alteration of activity (goal and need fulfillment) or alteration of place (seeking out better-suited sites). Watson (1991) further discussed the issue with research targeted at understanding the extent to which the environment is used to shape and nurture self-identity, whereas a person is dependent on a place existing to fill their need in self-identification (i.e., they depend on a place for social role justification).

Place dependence may be describe as the level to which an individual views themselves as being functionally dependent and associated with places or place types (Stokols & Shumaker, 1981). Place dependence may also include the aspect of how a specific place used in the current compares to other places in the satisfaction of the user's needs (McCool & Martin, 1994). Moore & Graefe (1994) theorize place dependence in a succinct manner, as the function of how well a setting facilitates a user's specific activities.

There are two common and generally accepted aspects to place attachment. Kyle, Graefe, and Manning (2005) positioned these two aspects not by terms, but with short

descriptions. The first, being the affect, emotion and feeling that are central to human-place bonding. The second, being the feelings with specific focus to environmental settings. The environmental settings in this statement refer to the scale, size, scope, and other tangible items.

Associated Research

Tuan's research began with a miniature vacation he and fellow graduate students took to Death Valley National Monument. It was during this experience, waking up and seeing the various natural elements in their entire splendor, that he first notes having emotional attachment to the place. Tuan (1974) remarks to the foreign nature of his attachment, something so non-native to him, yet he admired it for its beauty and internal value. Tuan goes further to explain the love of various places, aiding him in the name of his initial book, *Topophilia: A study of environmental perception, attitudes, and values* (1974). Subsequent editions have been published with differing commentary and explanations, but the foundation is still the same: people have positive emotional bonds to places. Tuan notices the love of the familiar, what most would describe as "home," being the place where an individual feels as though they belong. People, commonly, have a positive affection toward places they feel they belong with or in. Tuan went further as he offered explanations for those foreign to certain places yet still feel positive emotional attachments. The love of the opposite, or perhaps in modern terms, the love of the foreign object is the idea that one possesses positive emotional attributes toward places that are significantly different than what they are accustom to in the native environments. Tuan uses the example of the English gentlemen purposely seeking out desert environments, as they were completely foreign when compared to their native environments. Tuan's

insights and investigation into the love of place in various contexts was the initial major movement into place attachment research. Tuan (1974) first suggested one might love a place he or she had never seen before, emphasizing the special attributes of place instead of specific personal interaction with place.

Tuan began open discussions about how positive affections of place both home and foreign and Edward Relph continued this line of research. Relph's investigations into place and its meaning to the lives of individuals and communities lead him to believe that place was a crucial aspect of identity, belonging to a place was vital to personal health, and the lack of place attachment (he termed it 'placelessness') was a tremendously negative impact on individuals' lives. Relph (1976) investigated the basis for development of social and family roles in place, and how the conservation of place led to a stronger place attachment. Furthermore, Relph's research eventually lead him to believe that the lack of place attachment was of severe self, home, and community consequences. Relph focused his research on the aspects of place in their role in society. While his work with placelessness was instrumental in understanding the place attachment sphere of ideas, he was not without commentary on the importance of preserving the unique, authentic, and personal places to our society.

Relph went further to describe an aspect of place attachment as "insidedness," where individuals felt as though they were integrally connected to an environment, often noting that they were "totally at home" in the specific environment. While Relph concluded length of association was a significant factor for insidedness, other perceptions offer variations of the cause of such a phenomenon. The idea that self was intimately tied to place became a topic of further inquiry.

Proshansky (1978) speculated and investigated the role place has in the formation of self-identity. While Proshansky's research focused on a person's development of social role through place, it spoke again of the important place has in an individual's life. Specifically, Proshansky (1978) states, "there is a general place-identity for each individual which reflects his or her unique socialization in the physical world." Proshansky states that a person's relationship to the physical environment is quite complicated and includes aspects of ideas, emotions, personal values, personal and professional goals, preferences, skills, behavior, and an assortment of other, currently unknown, factors. Proshansky's work furthered the understanding of place attachment as he investigated the formation of self through place. Proshansky, Fabian, and Kaminoff (1983) describe the positive and negative attributes of place attachment as they relate to the cognition of the individual. Proshansky's work lists three specific places were role formation are important; home, school and neighborhood. It is through these three places that a person learns the most important social roles as they grow and develop.

Williams, Patterson, Roggenbuck, and Watson (1992) examined the relationship between place attachment, wilderness attachment, area substitutability, and several demographic factors. While results are mixed, most of the data obtained continue to affirm previous research and literature that the variables have a direct, positive relationship. A few items that did not confirm previous research is the relationship between place attachment and two variables (income, level of education). The relationship between place attachment and the two variables seems to be a direct, negative relationship. While this research clearly predates much of the place attachment research in the field of recreation or natural resources, it provides a few pieces of needed

information. First, place attachment is a valid and important aspect of planning for the use of spaces utilized for recreation. Second, place attachment within the fields mentioned is new and researchers continue to develop it as a theory and measurement tool.

Kaltenborn (1997) conducted place attachment research to understand the relationship between strength of attachment and attachment attributes. Kaltenborn identified several attributes of places that may lead a person to become attached to a place. The strength of attachment did not yield results significant enough to use for data interpretation on a large scale. Kaltenborn suggest that an individual's reason for strength of attachment cannot be predicted from sampling of general groups within society, perhaps referring to the need to sample specific groups to attain a depth of understanding. The research Kaltenborn conducted allows for future research in the same area to further understand the issues related to place attachment. It is possible that some instrument or design error could have resulted in some of the information being awry, leading to conclusions that certain place attachment theory could not be overlaid to general circumstances.

Warzecha, Lime, and Thompson (2000) studied the differences of place identity and place dependence on two national park service sites. The researchers selected a back country site and a front country site to gather information. Users of the back country site were found to have higher levels of place identity and place dependence when compared to users of the front country site. The researchers also found users with serious motives had higher levels of the two studied variables. Furthermore, respondents with high levels of dependence and identity were also in favor of strict management actions. The

researchers' emphasis on the selection of varied research sites is important to note, as it is important to be able to note similarities and differences in a similar study.

Sharpe and Ewert (2000) discuss the implications that may come about from interference in the formation of place attachment, specifically to wilderness areas. Certain management practices may reduce and limit place attachment. Certain management practices may also lead to the rapid declination of place attachment formation. Sharpe and Ewert urge management of wilderness areas to understand place attachment and perhaps preserve place attachments among users while fostering new place attachments. Sharpe and Ewert's suggestion that management also affects place attachment reminds researchers that not only are the participants and users important in place attachment research, but management and administration are equally important in understanding the dynamic place attachment phenomenon. Related to the absence, malformation, or declination of place attachment, Brown and Perkins (1992) also investigated the disruptions in place attachment. The negative aspect of place attachment, the lack of its existence for a variety of means, is important as our field seeks to understand the formation and growth of the concept.

Gustafson (2001) develops an initial three-node model as a framework to understanding the reason behind the development of place meaning in individuals. Gustafson uses a qualitative method to attain data describing reasons for respondent meaning of place and analyzes common themes within respondent data to develop the three-node model as an initial framework. This framework is valuable as it represents the meaning behind the place attachment in an individual. Future research linking environmental ethics and place attachment may benefit by using this model as a common

framework. In similar research, Stedman (2002) collected data to understand the relationships between personal cognitive attributions, identity, attitudes, and behaviors. Stedman's findings are interesting in that they indicate few direct relationships between these various factors. Stedman notes that further research is needed to better understand place attachment.

Moore and Scott (2003) conducted research to better understand the levels of place attachment of users of a large metropolitan park and of a specific trail within the park. They measured place attachment, behavior, and activity commitment. Place attachment to the park and trail were correlated. Behavior could not be related to place attachment and respondents with high levels of activity commitment were more likely to have a higher level of place attachment. One might triangulate this research by offering a new question; how might place attachment affect behaviors? Although Moore and Scott's study was unable to confirm any such relationship existed between the two, the researchers noted the need for more research in this area.

In related research, Backlund and Williams (2003) analyzed previous research to investigate the relationship between experience and place attachment to a specified place. The researchers also sought to understand how instrumentation factored into place attachment data. Researchers did not find a strong association between experiences and levels of place attachment. Researchers were also unable to draw adequate conclusions as to the relationship between specific questions in the research tool to certain levels of place attachment. This research is valuable in that one may be able to better able to select a research tool to use when attempting to elicit information regarding place attachment. It

also serves as an invaluable resource to garner support for future research regarding the relationship between experience and place attachment levels.

Williams and Vaske (2003) also tested instrumentation for measuring place attachment. The researchers' efforts focused on testing the validity and generalizability of the current measurement instrument used to measure place attachment in various fields of study. The measurement tool tested was concluded to test positive for validity and generalizability. This research sets the stage for the instrumentation as the primary research instrument to measure place attachment in future research. Currently, most researchers model their place attachment instruments to mirror the basic instrumentation that Williams and Vaske validated in their 2003 research.

Bow and Buys (2003) qualitatively studied the relationship between sense of community and place attachment with a focus panel group. Bow and Buys found that there was a link between a sense of community and various aspects of the natural environment. The research allows for a better understanding of the significance of place attachment in that it may aid in developing a sense of community, thus allowing for involved persons to develop strong bonds to the environment and others within that environment. Brehm, Eisenhauer, and Krannich (2006) did not confirm Bow and Buys 2003 research discussion. Brehm, Eisenhauer and Krannich (2006) conducted research to better the understanding of the relationship between social attachment, natural environment attachment, and environmental concern. Social attachment did not yield any significant correlations to environmental concern and natural environment attachment only yielded significant correlations to specific pieces of environmental concern. This research did not confirm previous research; therefore the issues involved need further

investigation and discussion. The researchers note that further investigation is needed to continue to understand the theories and ideas mentioned here. This gives one a strong basis for conducting further research related to the topics here.

In efforts to aid in the understanding the concepts of place attachment and place identity, Hernandez, Hidalgo, Salazar-Laplace, and Hess (2007) studied the differences of the two concepts of place attachment and place identity. Their focus was to differentiate between the two concepts and perhaps enable better understanding of the concepts. Place attachment and place identity had positive and negative relationships depending on the geographical location studied. Native and non-native residents showed positive correlations of the two concepts when location was not a factor.

In a quantitative study eliciting information from 328 residents in northern Italy, Rollero and Piccoli (2010) investigated the relationship between environmental perception and place attachment. The researchers found that there are perception of place affects place attachment and that place attachment correlates to various components of environmental perception.

In a somewhat different area of study emphasis, researchers used place attachment measurements to elicit information regarding choice of burial place. Casal, Aragones, and Moser (2010) investigated burial choices of Paris, France and Madrid, Spain residents. Through qualitative interviews, the researchers found mobility, attachment to birthplace, attachment to place of residency, and parental influence were primary factors in the decisions process for finding one's burial place.

Place Attachment Measurement Tools

Williams and Roggenbuck (1989) were perhaps the first researchers to develop an instrument set to specifically elicit place attachment information. Their work on the instrument produced moderate levels of validity, internal and external and moderate levels of generalizability. Subsequently, other researchers followed suit, tackling the issues of validity and generalizability in studies by building upon the information foundation. Moore and Graefe (1994) investigated the attachments users of rails to trails users related to their recreation settings. The researchers found the validity and generalizability of the Williams and Roggenbuck instrument to suffice, remarking further investigation is needed to hone the instrument.

In a study by Bricker and Kerstetter (2000), the instrument was used again in tackling the place attachment levels in whitewater recreationists. The researchers sought to understand the relationship between level of specialization of whitewater recreation users and place attachment levels of those users in the recreation area. Once again, the instrument proved successful, allowing for the researchers to adequately gauge place attachment levels of elicited participants.

Vaske and Kobrin (2001) investigated the relationship between place attachment and environmentally responsible behavior of local recreationists using local natural resources. The researchers found that place attachment had a positive influence on environmentally responsible behavior of the sample population. The model initiated by Williams and Roggenbuck in 1989 proved, once again, to be significant in the efforts of researchers to properly understand place attachment levels of participants.

While research using the developed instrumentation was merited with success, recent scholars have begun exploring the downfalls, quirks, and limitations of the instrument. Williams and Vaske (2003) explored a slightly adjusted scaled questionnaire as an instrument to elicit place attachment information (see attachment for instrument). Williams and Vaske (2003) report significant levels of validity and generalizability when using the revised instrumentation. An important note to add is that Williams and Vaske also confirmed the existence of two sub-dimensions within place attachment, signaling place attachment as a two-dimensional structure. Williams and Vaske's research elicited information across sites and settings to test the instrument and other researchers have begun using revised version of the instrument in numerous settings. The revised edition of the instrument used to measure place attachment has been widely utilized in a variety of fields investigating place attachment and related theories.

Kyle, Graefe, Manning, and Bacon (2004) used the improved instrument to measure place attachment as it related to social and environmental conditions along the Appalachian Trail. Hailu, Boxall, and McFarlane (2005) used the model to gauge place attachment as it relates to recreation demand. Alexandris, Kouthouris, and Meligdis (2006) successfully used the improved instrument in obtaining place attachment information from respondents in relation to their loyalty to various snow skiing establishments. Brown and Raymond (2007) also used a slightly altered version of the Williams and Vaske instrument. The researchers above sought to understand the relationship between place attachment and landscape values.

Other models for measurement of attachment do exist. While most models measuring attachment are not specifically created or designed for place attachment, many

scholars have altered attachment models for place attachment research. One such instrument that may be found in place attachment research is the model posed by G.M. Breakwell (1992). In Breakwell's identity understanding model, he uses four principles to describe identity. Continuity, self-esteem, self-efficacy, and distinctiveness are the four primary areas of interest when gauging the identity of an individual.

There are some instances where this model has been modified for use in place attachment research. One such instance of Breakwell's identity model in modified form in place attachment research may be seen in Twigger-Ross and Uzzell's (1996) work relating place attachment to local environment perception. Using structured interviews, researchers found Breakwell's model was suited, in altered form, to elicit place attachment information (Twigger-Ross & Uzzell, 1996). Their research found that those with significant levels of place attachment also had a positive perception of local environment(s). Participants with lower levels of place attachment were found to have neutral or negative perception of local environment(s). When one considers place it is not uncommon for climate to emerge as an important aspect of place and place attachment (Knez, 2005). In recent work, Knez built upon the model Breakwell put forth, in slightly altering the Twigger-Ross & Uzzell (1996) instrumentation for place attachment elicitation. Knez's research found that place attachment levels were often associated with significant climate factors. Climate factors were found to be significant aspects of place when place attachment levels were moderate or significant.

Beyond Breakwell's model, few place attachment elicitation instruments exist that are significantly different from the model first displayed by Williams and Roggenbuck (1989) and later modified and validated by Williams and Vaske (2003). While continued

inspection of the instrumentation exists, the model and instrument posed by Williams and Vaske still serves as the primary instrument in most place attachment research. Various researchers have altered the instrument for specific place name, research method preference (qualitative versus quantitative), and ability to easily combine the instrument with other instruments in multi-faceted studies.

In recent research, alterations of the Williams and Vaske model are exploring various dimensions that might factor into the place attachment of an individual (Williams & Vaske, 2003). While various qualitative research projects have remarked on the possibility of many sub-dimensions existing within place attachment, very few quantitative studies have explored that possibility. Lai, Shafer, and Kyle (2008) used a multi-tiered instrument to test the multi-dimensionality within place attachment. Using an expanded version of the Williams and Vaske tested place attachment instrument, the researchers were able to attain significant levels of validity (factor loadings of at least .50 for exploratory models) and reliability (composite reliability of .79 and .86). The newly developed model seems to work well within its setting, with the only downfall of having an average variance extracted (AVE) of .38, whereas previous literature often states that newly developed scales should attain an AVE of the threshold of .45 (Netemeyer, Bearden & Sharma, 2003).

A positive aspect of this new model is that it successfully tested three sub-dimensions within place attachment: the structural, functional, and affective dimensions. Confirmation of the three sub-dimension model expands beyond the previous two sub-dimension model. The functional (place dependence) and affective (place identity) were complimented with the structural aspect.

Environmental Ethics

While many see ethics and morals as somewhat arbitrary terms, this is not quite the case when discussion of the two terms is visited by scholars and philosophers. While ethics and morality are often spoken interchangeably, and their existence is most likely indefinitely linked, it is important to understand the essence of each term and its usage. Morals often refer to the code of personal conduct, citing various virtues as reasons for morals within one's life and throughout one's life decisions (Lundmark, 2007). It may be stated that morals are a very personal identification of a life process and decisions continuum. This continuum varies from a very "wrong" to a very "correct" or "right" side for each and every aspect of one's life. How one interprets this dynamic process would be one's moral process, or morals in action.

The basic foundation of morals is to aid an individual in determining, when making any type of decision, what is the correct decision as the decision relates to a set of virtues. While these virtues may be instilled or known to the individual in a variety of access avenues, every moral action or decision relates to some virtue. When a decision is made, it either violates or promotes a virtue. There is continued argument as to whether or not controlling decisions via outside influences (virtues) is completely moral in and of itself. An argument may be made that any alteration of a decision or action is not completely moral in that it violates the individual's ability to make decisions and take actions that solely benefit self. The idea that morals are limitations of a person acting in a manner of self-interest is not without merit. However, the type and recited virtues may or may not benefit either side of such arguments. Virtues are most often instilled in individuals at various ages, often beginning with young children and continuing until an

individual's ability to learn is no longer present. Morals are personal in nature, as they relate specific actions and decisions to personally prescribed feelings and beliefs.

While ethics and morals are often interchanged in conversation and various publications, the relationship of ethics to morals is neither interchangeable nor equal. While notably linked, ethics' presence highlights a development within a culture or social structure, not self. According to Aristotle, ethics were a set of guidelines of how to best live life, how one seeks to best seek out well-being and happiness, as it coincides with eudemonia and excellent character development (Aristotle, Brown, & Ross, 1999). Thus, in an Aristotelian viewpoint, ethics are a very personal act in which one puts virtues and morals into action.

Immanuel Kant, a German philosopher, held a somewhat different and unique position when considering ethics. Kant, a deontologist, believed in ethics as actions that sought to perform a duty rather than fulfill a personal or self-fulfillment aspect. Kant's ideal was that one would only perform a duty if and when the individual could will such an action to be a universal truth or duty (Stokes, 2005). Thus, ethics were a truth resulting in action, with the notion that such actions are only ethical when they may be instituted as a universal law.

While the idea of ethics and the practice of philosophy related to ethics are often cited as a human endeavor, there are philosophers, academics, and others that extend the essence of ethics beyond humans. It is common that ethics and ethical decisions often focus on how the means and ends of a decision or action interact with humans. This practice is not uncommon, whereas most ethical decisions of deliberation often are discussed with human interaction issues in mind. There are many recent ideas and

philosophies that show philosophers and other people understanding how animals, plants, and non-living entities might also be affected by ethical decisions and their resulting action or inaction Leopold, 1978).

Environmental ethics, as they have become known, is the ethical philosophy that extends ethical consideration beyond humans to other animals, plants, and all non-living things (Vardy & Grosch, 1997). Extending the consideration beyond humans within an ethical dilemma requires increased awareness throughout all ethical decision-making processes. Environmental ethics require those associating or using the philosophy to consider an increased variety of aspects, those living and non-living beings and how they are affected by the action or inaction of an ethical decision. In the United States, environmental ethics arose within a romantic movement as Americans began growing fond to aspects of nature and the ideas associated with the connection to it.

It was Henry David Thoreau that many cite for his initial efforts to aid citizens in understanding the beauty held within natural areas. Thoreau wrote and communicated effectively, and persevered, albeit beyond his time, in his mission to instigate a love for the natural world in the people of the United States of America.

Many others followed suit as they aimed at creating bonds between the natural world and humans, eliciting and fostering an ethic with focus on the care and consideration of the natural world. Initially, as these theorist hoped, Americans began to pour into the various natural areas. Local, state, and national parks were overflowing with visitors eager to see the natural wonders of the world they lived in. While people were connecting with the natural world, they were also, and often, neglecting such places as well.

In *A Sand County Almanac*, Leopold (1978, p. xviii) writes, “We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect.”

Also Leopold’s environmental ethics, described in his various written works, forces the reader and engaged parties to consider a stance on ethics that move from bond creation to preservation and conservation of the environment. "No important change in ethics was ever accomplished without an internal change in our intellectual emphasis, loyalties, affections, and convictions. The proof that conservation has not yet touched these foundations of conduct lies in the fact that philosophy and religion have not yet heard of it. In our attempt to make conservation easy, we have made it trivial." (p. 246)

In one of his many writings, Leopold (1978, p. 262) stated, “A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise.” Such a stance became the primary position of pro-environmental thinkers and philosophers. Environmentalists such as Rachel Carson, Lynn White, Garrett Hardin, and Vandana Shiva continued to push for the conservation and preservation situated ethics of Leopold (1966). During the 1970s and 1980s, various journals and other publications related to environmental ethics began to become more popular than ever before. *Environmental Ethics*, an academic research journal first published in 1979, focused on the philosophical aspects of environmental issues and dilemmas. Environmental journals from other countries followed suit with Canada producing *The Trumpeter: Journal of Ecosophy* beginning in 1983 and Great Britain producing *Environmental Values* beginning in 1992.

In recent academic writings the focus of environmental philosophy has allowed for another aspect of environmental ethics to surface: the measurement of a person's environmental ethics. The knowledge and understanding as well as the scientific and poetic voice for the existence of environmental ethics have been situated in the lives of researchers and consumers since the writings of Thoreau. Only recently, however, has the environmental ethics of citizens come under the radar of researchers.

To understand the users' values related to environmental ethics, the researcher must set out to understand something related to the action or dilemma deliberation within the ethical decision making process. While a researcher cannot guarantee an inspection of the process in action, he or she relies on the research participant to recall various ethical dilemmas related to the environment. In research related to environmental ethics, two primary themes emerge. Environmental values and environmental behavior emerge as the target for stimulating the understanding of a participant environmental ethics. While initially grouped in conversation, the two aspects are distinctly different.

Environmental behavior includes specific actions and activities of the participant related to environmental decisions. Such inquiries do not detail the underlying philosophy of the action, or whether such actions may be associated as conforming or antagonizing the participants stated environmental philosophy. Furthermore, such inquiry solely relies on specific instances within a scenario, and without further investigation, do not take into account other dilemmas that might occur before or after the event. An example to aid in understanding this would be that while dilemma "A" shows one pattern of environmental ethics, it may or may not be associated with dilemma "B", which occurs one year after the initial environmental dilemma. Many studies relying on environmental behavior

rarely discuss the lifetime of the participant's environmental philosophy, and often are attributed to only recent issues.

Another aspect of environmental ethics is environmental values. As discussed previously in this chapter, values are axioms that a person develops for life guidance, personal philosophy, and dilemma deliberation and resolution. Common values within environmental ethics include conservation, preservation, restoration, and sustainability. This list is not, by any means, encompassing of all environmental values. While values may lend to various practices and decisions, leading to various behaviors, they are not necessarily completely linked. Researchers whose focus is environmental values focus on the presence or absence of such values, and typically do not inquire as to the position of the participant in incorporating such values into action. It is, without a doubt, that both values and actions are an important aspect of environmental ethics. Due to the issues related to directly linking the two aspects in research, most of the current research includes the aspect of environmental behaviors.

While the body of information regarding environmental ethics and environmental values is not one of significant historical length, recent emphasis regarding these issues in research has produced important data. Manning, Valliere, and Minteer (1999) sought to understand the relationship individuals might yield between environmental ethics, personal forest values, and attitudes toward nation forest management. Responses indicated a significant relationship between the three factors and also indicated high levels of pro-environment and ecological preservation among respondents. This research provides significant insight into two areas: environmental ethics and personal attitudes toward management styles. The research tool used in this study is one that might be

useful in future research related to environmental ethics, land use ethics, or resource management.

Schultz and Zelezny (1999) investigated the relationship between personal values and environmental attitude using various tools. Their goal is to decipher which tools accurately elicit the information needed concerning environmental attitude while also understanding the correlations between types of values and types of environmental concern. Schultz and Zelezny confirmed their hypothesis that some values were positively associated with environmental attitude, while other values were negatively associated with environmental attitude. Their research in regards to instrument testing proved to be helpful in a variety of future research projects, as the validity and generalizability levels produced aided in justification for use as research instruments. In a similar study, Wearing, Cynn, Ponting, & McDonald (2010) interviewed international backpackers in Australia to determine the consistency of respondent environmental concern and respondent behavior related to environmental issues. Through qualitative method, the researchers found no consistency relating environmental concern and behavior. Researchers urge more research to understand the relationship between environmental concern and behavior, citing apparent weaknesses in previous research and possibly their own. This study is valuable in that it inquired as to the relationship between environmental concern and behavior, but more so that it found this relationship to be very weak.

Grendstad (1999) conducted research to test the validity and correlation values between the current New Ecological Paradigm (NEP2) in comparison to the previous New Environmental Paradigm (NEP) and the Dominant Social Paradigm (DSP).

Grendstad finds that the NEP2, as a research tool, does not achieve validity levels high or consistent enough to warrant widespread use in research. Grendstad also suggests that previous models used (NEP, DSP) are also not adequate tools for research and that much work is required to develop a scale/tool to examine the relationship between humans and the natural environment. Grendstad's research is vital in that it critically examines a much-used tool and discloses validity issues with the NEP scale. The critical analysis leads future researchers to consider their foundation for using such instruments in their research. In similar fashion, Dunlap, Van Liere, Mertig, and Jones (2000) criticized the original New Environmental Paradigm (NEP) for obvious faults and offered a revised New Ecological Paradigm to overcome the shortcomings of the original scale. Researchers completed a study using the revised NEP that offered similar or better validity in various areas than the original NEP. Further research might aid in providing broad usability of the new scale. The research presented various forms and visuals to aid future researchers in understanding of the validity of various research instruments as well as providing researchers with a new potential instrument to collect data in environmental attitude research.

Other attempts to analyze the current methods used to elicit environmental values from various respondents exist. In one such project, Fischhoff (2000) seeks to understand the disconnection between the information given to the respondent in the form of an explanation and question and the actual information each respondent attains from the explanation and question. Fischhoff emphasized the benefits of the extra work needed on the front end of a study to enable the researcher to properly elicit wanted information. Lundmark (2007) discussed the strengths and weaknesses of the New Ecological

Paradigm (NEP) in its measurement of environmental ethics. The NEP draws criticism in that it lacks depth of understanding in various areas of environmental ethics and does not provide information with respondent level of understanding of the instrument/questions. Lundmark offers a suggestion of scale revision to include focused questions to elicit more information. Lundmark also suggests researchers follow up the NEP with qualitative interviews to attain respondent feedback on each question.

Further instrument and model testing continues. Recently, researchers in New Zealand sought to test various models to elicit information related to environmental motive and behavior. Milfont, Duckitt, & Cameron (2006) tested two cultural groups in New Zealand for their environmental motive concern and pro-environment behavior. Part of the research was to test three different models to elicit this information from the subjects. The researchers found that differences did exist between cultural groups and that a relationship did exist between environmental motive concern and pro-environmental behavior, although this relationship was not similar between groups. Researchers also found that one research tool to be better than the others, the tripartite model of environmental concerns was remarked as being much better. This research allows for other researchers to understand a different model for eliciting certain types of information as well as prompting further researchers to further understand the differences among cultural groups.

Environmental Ethics Measurement Tools

While recent events have spurred more robust methods and tools, initial measurement of environmental values and ethics began, in the United States, in the 1960s. During the 1960s two philosophies emerged in regards to the measurement of the

attitude of people toward the environment. One such philosophy in action was the Dominant Social Paradigm (DSP). The DSP has three primary components: 1) advances in technology will overcome any degradation to the environment, 2) cultural and economic growth will resolve any societal unrest, and 3) public officials are in office to represent their constituents and only they have the ability to monitor and affect policies that in turn affect society (Rollfing, 1996).

In response to the DSP, another mindset also emerged. The New Environmental Paradigm (NEP) became the initial philosophy to found theories and instruments in environmental ethics research. The NEP has two primary components: 1) only through policies and regulations of limited growth and limited natural resource degradation can we affect the negative environmental impact and 2) recognition of the idea that humans' interaction with the environment only degrades the environment (http://www.socialresearchmethods.net/tutorial/Pelstrng/validity.htm#NEP). As one may notice, when comparing the DSP and the NEP, the two philosophies are quite contrasted in one relies on growth and technology to overcome any environmental and societal degradation (DSP), while the NEP relies on placing limitations on usage of such concepts to limit environmental and societal degradation. The NEP became the philosophy and paradigm when researchers began measuring environmental attitudes and values. The DSP, used in many other research study areas (sociology, psychology, etc.) was never embraced to the point where it was used as a primary research philosophy in the various fields of study relating to the environment.

The New Environmental Paradigm Scale

In 1978 two researchers, Riley Dunlap and Kent Van Liere published a study in *The Journal of Environmental Education* that promoted a new scale, using the NEP as a base, to measure environmental values (Dunlap & Van Liere, 1978). The new scale, simply called the NEP, was an instrument used to measure environmental attitude and personal philosophy relating to the association between a participant and their environmental interaction. Dunlap and Van Liere were successful in many facets of their research, in that they developed an instrument to measure environmental values (and in essence, ethics) as well as provide the data to support the instrumentation.

Construct validity, concurrent validity, and face validity were all supported through the researchers' efforts throughout their literature review, philosophical foundation, instrumentation development, research methods, and collected data. Dunlap and Van Liere's instrument was generally accepted as the new standard for measuring a wide range of environmental issues of various participants. Researchers have altered this research instrument for various studies in a variety of academic fields.

As with any initial concept, the initial installation is usually revised, updated, or overhauled. Through the many years of use, many researchers remarked on common issues found in the NEP scale. One such issue is that the range of the topics presented within the NEP scale is quite limited (Amburgey & Thomas, 2011; Caron, 2002). Other researchers commented on the slanted or skewed presentation of the questions or instrumentation, meaning most of the instrument presented information in a pro-environmental attitude style, creating objections and issues concerning instrument and researcher bias related to attained data. The third and final common issue was the age of

the instrument related to the terminology. The terminology used in the initial instrument was common and accepted in the late 1970s during initial development, but recent events and cultural change has dictated the dating or non-use of many of the original terms (Caron, J.A., 1989, Chandler, E.W. & Dreger, R.M., 1993, and Gray, Borden, & Weigel, 1985).

New Environmental Paradigm Revisions

In acceptance of various critiques, Dunlap and Van Liere sought to improve the NEP instrumentation. In 2000 a revised version of the NEP arose from previous and updated research conducted by Dunlap, Van Liere and a wide variety of other researchers. The revised scale, termed the New Ecological Paradigm Scale (New NEP or Revised NEP) performed well, with various indicators marking internal consistence, validity, reliability and generalizability (Dunlap, Van Liere, Mertig, & Jones, 2000). Since the improved NEP instrumentation was published in 2000, many researchers in various fields have used the instrument. As of 2008, the revised scale has been used in hundreds of studies in the United States and many more outside the U.S. (Dunlap, 2008).

In 2007, the revised NEP scale was successfully revised and used for use with children respondents (Manoli, C.C., Johnson, B. & Dunlap, R.E., 2007). The 2007 study results suggested that not only was the revised NEP scale successful in eliciting the information needed, but also may be further modified for specific audiences without jeopardizing the validity of the instrument. While the scale and instrumentation have been solidified and validated throughout various studies, the new NEP is not without continued critique and revision support. Cordano, Welcomer, & Scherer (2003) advocated use of the revised scale, but with caution in a variety of contexts, yielding too

many calls to improve the scale's terminology when used in various fields of study. Furthermore, the authors comment on restricting the number of items used within the scale considering the research, much like how the total number of questions was limited in the study by Manoli, Johnson, and Dunlap (2007) when children are the targeted respondents. There were also suggestions in analysis in considering sub-scales within the dimensionality of the instrument by Amburgey and Thoman (2011), as they used confirmatory factor analysis to confirm five sub-dimensions within the NEP. The researchers also noted weak support for considering the revised NEP as a single-dimension scale (Amburgey & Thoman, 2011).

While the revised NEP scale has critiques and critics, its use is common and there are numerous published studies that provide support for its use. The difficulty in advocating for the use of this scale is not in the volume of supportive material, but the lack of other scales in use. While other scales and instruments for extracting environmental attitude and values do exist, widespread use is lacking, resulting in a lack of evidence to support use in current research. Models used in other fields of study such as the planned behavior model (Montano, Kasprzyk, & Taplin, 1997), the integrated behavioral model (Montano, Kasprzyk, & Taplin, 1997), among many others, exist and there are currently many instruments showing successful rates in validity and reliability. To use these models to elicit the information this research project hopes to attain, is not within context of this study. Therefore, the researcher shall use an altered version of the new NEP scale. Alterations to the scale are for specific use only, replacing specific names, dates, times, and other items to ensure the instrument coincides with other

instrumentation and site specific data collection. The researcher shall not make major alterations to the instrument.

Oklahoma State Parks

Oklahoma State Parks were pieced together through a variety of acquisitions, purchases, and leases throughout the state. In the 1920s and 1930s the state of Oklahoma acquired, through a variety of means, several large tracts of land for the preservation and recreation activity. Preservation and conservation were the first discussed foundational philosophies used in attaining and setting aside tracts of land. Later, in order to compete for tourism economic benefits, the state began the process of developing land areas of recreational uses, mostly fishing and hunting. As stated in the Biennium Report (Oklahoma Game and Fish Commission, 1926. P22), Oklahoma seemingly lacked the facilities and support for summer lodges, but argued that recreation areas for hunting and fishing would likely lure visitors and businesses to the state for tourism business.

Like many other states during this period of time, Oklahoma sought to develop its resources to be competitive in the state park and resource market. The management of these areas, initially under Oklahoma Game and Fish Commission, sought to serve two user types (Oklahoma Game and Fish Commission, 1926). The first being the hunter or angler who would prefer areas near their recreation activities, away from congestion, traffic, and noise. Another user the commission sought to serve was the weekend camper, who did not have intentions of hunting or fishing in a serious manner. At the time, these tourists typically used an automobile to seek out experiences and preferred recreation activities within easy connection to other experiences and areas. With these

two foundational ideals, the Oklahoma Game and Fish Commission began development of several park areas (Oklahoma Game and Fish Commission, 1926. P22).

Early in the year of 1935, Oklahoma's State Park Board was created through the appointment of several regional commissioners, a procurement officers, and nominal support staff. The board moved quickly in its work, acquiring several large tracts of land by the end of the summer. The initial land areas were donations from various governments within the state, mostly city and county donations. While there is discrepancy in reports, there are either seven or eight original state parks, all of which began development in 1935 or soon thereafter. Lake Murray State Park was the eighth park to attain state park status. While it was the first designated area for use as a state park, the land and area remained under supervision of the Fish and Wildlife Service until after the creation of the original seven parks under the Division of State Parks. The original parks include: Quartz Mountain, Boiling Springs, Roman Nose, Osage Hills, Robbers Cave, Beaver's Bend, Spavinaw Hills (Spavinaw), and later Lake Murray. Of these eight parks, Quartz Mountain is no longer officially within the state park system, but is systematically and philosophically managed within similar model as other state parks. Quartz Mountain is now within the management of the Oklahoma Board of Regents for Higher Education. Spavinaw Hills State Park has received a slight name change as Spavinaw State Park and been reduced significantly in size from the original property. The remaining original parks are still within the system and are still accurately named.

The development of the original state parks in Oklahoma was made possible by the work of the Civilian Conservation Corps (CCC) and the Public Works Administration

(PWA). Under the presidential term of Franklin D. Roosevelt, the economic stimulus to overcome the great depression included work within various areas of the United States to be completed by government aid supported groups. These groups included the CCC and PWA and many others. Oklahoma received assistant in development of their original eight parks through the CCC and PWA during the mid to late 1930s. Many of the CCC and PWA projects within the state park system are still available for viewing to date, with quite a number of these structures still in use.

It is important to recall that the state park system, with the newly formed board, was still under the management system of the Oklahoma Game and Fish Commission. Through several state legislative acts and several systematic adjustments, it was not until 1937 that the state parks division received approval for its first director, Mr. A.L. Reeves (Oklahoma Planning and Resources Board, Sess. Law Ch. 24, 1937). Early authorization of the state park board included development of management practices, policies for protection of resources, and rules to safeguard as to the safety of the resources, state personnel and visitors. In early 1940s the Division of State Parks was consolidated with the Division of Forestry. It was not until later (1972) that legislative action again realigned the various state departments.

In 1972 The Oklahoma Tourism and Recreation Department was formed through legislative action, which included the management of Oklahoma's state parks. Currently the Oklahoma Tourism and Recreation Department consists of several divisions: Administrative Services, State Parks, Travel Promotion, Oklahoma Film and Music, Discover Oklahoma and Oklahoma Today Magazine. All state parks fall under the jurisdiction of the State Parks Division of the Oklahoma Tourism and Recreation

Department. There are currently 35 state parks operating within the State Parks division, as of August 2011. The number of state parks is slated to change as it is speculated that several state parks will be closed at the end of the peak summer season. The reasons for closure of parks are varied, including budgetary, economic, usage, and others. A large portion of Lake Texoma State Park was recently closed, with various parts of the park sold and transferred. Several parks in Northeast Oklahoma (Spring River Canoe Trails, Bernice, Twin Bridges, Honey Creek, Disney, Little Blue, Cherokee Riverside, Cherokee Lakeside, Snowdale, and Spavinaw have officially been realigned and named, as all will fall under the title Grand Lake State Park. How the areas will be named as sub-divisions of Grand Lake State Park has yet to be determined.

Research Sites

The state parks to be included in this study are Beaver's Bend State Park, Sequoyah State Park, Boiling Springs State Park and Quartz Mountain Resort Arts & Conference Center. The researcher opts for these parks as the research sites due to their orientation within the state of Oklahoma, being located in the Southeast (Beaver's Bend), Northeast (Sequoyah), Northwest (Boiling Springs), and Southwest (Quartz Mountain) parts of the state. This diversifies the geography and types of resources, as each research site offers varied experiences, various natural resources, and various amenities. It allows the researcher to avoid similar features within parks in close proximity to one another.

Beaver's Bend State Park. Beavers Bend State Park, one of the original seven state parks in Oklahoma, located in the southeastern corner of the state, lies within Oklahoma's McCurtain County (Caneday, L., Jordan, D., Chang, K., Bradley. M.J., & Hassell, D. 2010). This state park is nestled into a river system that meanders through the

Ouachita National Forest and abuts Broken Bow Lake, an Army Corps of Engineers managed water resource (History of the Area: Broken Bow Lake, retrieved November 3, 2010).

The Oklahoma State Park Commission created Beavers Bend State Park in the early 1930s through land donations from local communities and businesses, as well as land purchased outright with monies from a variety of sources such as the National Park Service, the Oklahoma Legislature, and so forth (Reeves, 1938). A Civilian Conservation Corps camp at the park site in 1938 improved the park significantly with major improvements to transportation infrastructure and facilities for public and administrative use (Jacobs, 2008). Many of these historic structures are still in place today, with many showing signs of continual restoration and upkeep.

In 1958, the Flood Control Act authorized the Army Corps of Engineers (ACE) to construct Broken Bow Lake as a flood control mechanism for the immediate watershed and overall flood control arrangement within the ACE system (Broken Bow Project, 2009). Upon completion, the ACE authorized many additional acres for lease to the Tourism and Recreation Department for recreation use. This created additional use areas, initially developed as Hochatown State Park in honor of the community of Hochatown that was inundated with the creation of Broken Bow Lake.

Through administrative decisions, management within the state park system incorporated Hochatown State Park into the Beavers Bend State Park system of areas for recreation use (Jacobs, 2008). Administration cited financial constraints as well as efficiency of on-site management as important factors for the decision. Beavers Bend

State Park now contains 7,255 acres when considering leases from the ACE as well as original property owned by the state (Caneday, L., et al. 2010).

Beavers Bend lies approximately six to seven miles north of Broken Bow, Oklahoma on Highway 259. The distance between the two entities creates a special relationship between the park and the local community. Broken Bow, a small town, does not seem to directly benefit from the visitation and tourism to the park. The most notable addition to the city that might be related to the impact of tourism is the presence of many fast-food eating establishments. The highway to Beavers Bend State Park (259), which allows vehicular access from the south and north, does reflect significant impact from tourism to the state park. The highway to the north and south of the entrances to the park (there are several) contains a large number of diverse businesses linked to tourism related to the park. During my visits, I noted over a dozen various eating establishments along the highway corridor, as well as many souvenir shops, convenience stores, and land/cabin sales and rentals. A National Forest Center and a Wildlife Museum are also located within close proximity to park entrances. At certain times, each of these various businesses or facilities was extensively used by public. It was difficult to determine if the usage of such facilities was of local or tourism nature.

Lodging within the state park is allowed through the state park lodge located on the shores of Broken Bow Lake, cabins situated throughout the entire park system, and many various types of camping spots also located throughout the entire park system. Lodging outside of the state park consists of a significant variety of options. Local operations renting out cabins is quite popular, with cabin rentals and sales located throughout the highway corridor and along the park entrance roads. Contrary to what one

might think, there are not many hotels or motels to choose from in the immediate area. There are three of these types of facilities, all located in the town of Broken Bow.

Sequoyah State Park. Sequoyah State Park resulted from a lease of 2,780 acres from the United States Army Corps of Engineers (USACE) beginning July 1, 1948(Caneday, L., Chang, K., Jordan, D, Bradley. M.J., & Hassell, D.S. 2010). Sequoyah State Park lies within the Cherokee and Wagoner counties in northeast Oklahoma. Sequoyah State Park is located on a large peninsula on Fort Gibson Lake. Fort Gibson Lake is one of several large lakes that reside on the eastern corridor of Oklahoma. Revisions of the original lease between the state of Oklahoma and the USACE were made in 1952, 1954, and 1956 (Caneday, Jordan, Chang, Bradley, & Hassell, 2010). Each revision to the lease agreements added acreage that would be held within the state park management system. The most recent lease agreement between OTRD and USACE extends through June 1, 2048 (Caneday, L., et. al. 2010).

Sequoyah State Park lies approximately ten miles East-Southeast of the town of Wagoner, Oklahoma on Highway 51. The distance between Wagoner proper and the state park creates a corridor of commercial business, with overnight accommodations, gift shops, and other commercial enterprises occupying Highway 51 between Wagoner, Oklahoma and Sequoyah State Park. The park is also in close proximity to another major city, Muskogee, Oklahoma. Sequoyah State Park lies about thirty minutes north of Muskogee. Access to the park from Muskogee is varied, with routes all being about thirty minutes total distance between the two entities. The town of Hulbert, Oklahoma lies directly east of the park by about eight miles.

Boiling Springs State Park. One of the original seven Oklahoma state parks, Boiling Springs State Park was built by the Civilian Conservation Corps in the 1930s (Reeves, 1938) and lies about six miles east of Woodward, Oklahoma via State Highway 34 and 34C. The state park was named after one of the several natural springs located in the park. Visitors described the "boiling" effect as the inflowing water turned the sandy soils over and appeared to be boiling. The 820 acre park encompasses the seven acre Lake Shaul and includes over 50 camp sites, four cabins, two group camps, two picnicking areas, a golf course, an in-ground swimming pool (CCC era), and miles of various trails for hikers, cyclists and equestrian users. Boiling Springs State Park is located in the central part of Woodward County in northwest Oklahoma.

Quartz Mountain Resort Arts & Conference Center. Formerly known as Quartz Mountain Nature Park and Quartz Mountain State Park, the area is officially named the Quartz Mountain Resort Arts & Conference Center and commonly called "Quartz Mountain" by visitors. Quartz Mountain was one of the original seven Oklahoma state parks, and includes over 10,000 total acres of recreational area, with around 6,000 acres of lake area and over 4,000 acres of land. The Resort Arts & Conference Center boasts eight cabins, a bunkhouse, a performing arts complex, five performing arts studios, an outdoor amphitheater, over 200 various campsites, sand dunes, Altus-Lugert Lake (Lake Altus), an ATV Area, and many miles of various trails for hikers, cyclists, and equestrian users.

In 1999 the State Legislature of Oklahoma approved for the property at Quartz Mountain State Park to be transferred to the Oklahoma Board of Regents of Higher Education with the intent that the park's purpose and resource could be better managed

by an entity other than the Division of State Parks. The transfer became official in 2002. In 2001 the Quarts Mountain Arts Resort and Conference Center re-opened after substantial renovation and, in addition, acquired Baldy Point for preservation and conservation of its historical and natural resources.

Quartz Mountain is located about 20 miles north of Altus, Oklahoma on Highway 283. The resort is located in Greer County. Lake Altus is actually split between Kiowa County and Greer County. Being that the resort park is located on the western side of the lake, it falls within the boundaries of Kiowa County.

The 1938 Rivers and Harbors Act approved creation of the Lugert-Altus Flood Control and Reclamation Reservoir. The development was planned to raise the dam and corresponding lake level 50 feet to its present level for the purpose of irrigating thousands of acres of cropland in the southwest region of Oklahoma and to provide flood control. This development was completed in 1941.

Chapter III

Research Design & Methodology

A limited number of research projects relating place attachment and environmental ethics have made available a solid foundation for future research. There are opportunities for scholars to broaden the understanding of the relationship between environmental ethics and place attachment. The shortcoming to the relationship between these two concepts is the incomplete understanding beyond the few specific studies current available for private and public entities. Furthermore, research involving place attachment, environmental ethics, or the combination thereof is restricted even more when considering Oklahoma places as research locations.

As previously stated, there is extant research in Oklahoma with various foci of place attachment and environmental ethics. No available studies directly inquire as to the relationship between place attachment and environmental ethics. The scopes of the various research projects are specific and narrow. No currently accessible research conducts studies in more than one place. Oklahoma, known to be one of the most geographically diverse states in the United States (Jacobi, 2010), provides proof that, while specific area studies are useful, it may benefit the researcher to include more than one area in his/her research design. The researcher collected data from more than one site, which may enhance the understanding of place attachment and environmental of

state park visitors and employees. Due to the diverse geographic nature of Oklahoma, various places may allow for varying levels of place attachment and environmental ethics, depending on site location and any other factors. Due to the limited available research, various land managers and users do not have adequate data for information and decision-making processes. Data including various Oklahoma sites and Oklahoma respondents is critically limited. In order for land managers and users to be able to use research data, such information must be relevant and useful. Current literature and information available is not based in Oklahoma, making for a difficult translation when considering such information in managerial decisions. As previously stated, with no way to compare various places in Oklahoma, the lack of information lends to administration and management to rely on external information, external forces, and a host of other outlets to aid in decisions.

The purpose of this study is twofold. The objectives are to examine the possible relationship between place attachment and environmental ethics as well as review any possible similarities or differences that may exist between the user and management populations.

Place Attachment Research Questions

1. What is the current status of place attachment of visitors and employees at Oklahoma's state parks?

   H_0: There is no difference in place attachment, as measured by Williams and Vaske's (2003), between Oklahoma state parks visitors and employees.

H_A: The levels of place attachment of visitors at Oklahoma's state parks are not equal to place attachment reported by employees of Oklahoma State Parks.

2. Is the level of place attachment influenced by demographic variables?

   H_0: Demographic variables do not influence place attachment, as measured by standard demographic questions.

   H_A: There are certain demographic variables that have greater influence on place attachment, as measured by standard demographic variables..

3. Is the level of place attachment influenced by respondent's environmental ethics status?

   H_0: Place attachment of Oklahoma state park visitors and employees is not influenced by measured independent variables related to environmental ethics, as measured by the revised New Ecological Paradigm (Dunlap, Van Liere, Mertig, & Jones, 2003) and the Place Attachment model by Williams and Vaske (2000).

   H_A: Certain independent environmental ethic variables have more influence on a respondent's place attachment, as measured by the revised New Ecological Paradigm (Dunlap, Van Liere, Mertig, & Jones, 2003) and the Place Attachment model by Williams and Vaske (2000).

4. Does one of the sub-dimensions of place attachment, place identity and place dependence, have greater influence on environmental ethics when compared to the other?

H_0: There are no sub-dimensions within place attachment that may exert greater influence on environmental ethics when compared to the other sub-dimension.

H_A: One sub-dimension of place attachment that may exert greater influence on environmental ethics when compared to the other sub-dimension of place attachment.

Environmental Ethics Research Questions

1. What is the current status of environmental ethics of visitors and employees at Oklahoma's state parks?

   H_0: There is no difference in environmental ethics, as measured by the revised New Ecological Paradigm (Dunlap, Van Liere, Mertig, & Jones, 2003), between Oklahoma state parks visitors and employees.

   H_A: Oklahoma state park visitors current status of environmental ethics is not equal to state park employees when measured by the revised New Ecological Paradigm (Dunlap, Van Liere, Mertig, & Jones, 2003).

2. Is the level of environmental ethics influenced by demographic variables?

   H_0: There are certain demographic variables that have greater influence on environmental ethics, as measured by standard demographic variables.

   H_A: The influence that demographic variables have on environmental ethics is not as significant when compared to respondents of similar studies.

3. Is the level of environmental ethics influenced by respondent's place attachment?

H_0: There is no difference in the influence place attachment has on environmental ethics, as measured by the revised New Ecological Paradigm (Dunlap, Van Liere, Mertig, & Jones, 2003) and William and Vaske's (2003) place attachment scale, between Oklahoma state parks visitors and employees.

H_A: The level of environmental ethics changes as the level of place attachment changes.

Population and Sampling

The population is a set of items from which the researcher draws a sample to make inferences regarding the population. A subpopulation is bracketed sets within the population that may or may not significantly differ in relation to each other regarding the research topic(s).

The population in this study is Oklahoma residents that visit state parks. The 2010 United States Census (2010) reported a total Oklahoma population of 3,687,050. Non-residents of the state of Oklahoma will not be included in this study. The researcher shall include only Oklahoma residents in the research data collection.

In this research study, several subpopulations occur naturally, defined as clusters. Initial cluster sets included within the population are respondents from the various selected state parks. The researcher has selected four state parks to facilitate the research: Sequoyah State Park, Beaver's Bend State Park, Quartz Mountain Arts Resort & Conference Center, and Boiling Springs State Park. The researcher chose these Oklahoma parks as they were geographically spread throughout the state in the regional quadrants, and are not geographically amassed. Clusters within the population are persons that respond to the research instrument at the specifically chosen state park.

Respondents are on-site at the state parks when the researcher conducts the study. This is a naturally occurring cluster, as the researcher does not predetermine a respondent's site location.

Other clusters exist, as the researcher chose not to include many parks in the Oklahoma state parks system. Due to financial and chronological feasibility, certain limitations were forced on the study, and research regarding all the state parks is not possible at this time. The researcher chose four sites for this research, each research site chosen to represent the four main regions of Oklahoma. The four sites are Beavers Bend State Park, Sequoyah State Park, Boiling Springs State Park, and Quartz Mountain Resort Arts and Conference Center.

Another cluster set exists in that respondents are visitors/users of the state park or respondents are employees of the state park. Any respondent conducting any official park business is considered an employee of the state park system. This includes all staff, management, administration, volunteers, and others holding themselves out to be one of the named roles. Any respondent not fitting into the category of park employee is considered by all intent and purposes to be a park visitor. A park visitor is any person using the state park in any capacity. Any vendors, outsourced service personnel, or concessionaires are not the intended audience for this study and will not be solicited. Park visitor use includes overnight visitors and day use visitors. Activities and engagements within the state park various from park to park. The clustering, to review, is park employees and park visitors. This is a naturally occurring cluster, as the researcher does not aid in putting various respondents into one category or another.

Therefore, the population is Oklahoma residents, with several naturally occurring clusters within the population. The researcher acknowledged two sets of clusters for the scope of this study. The first cluster set is the selected individuals at a specific site (state park). Oklahoma Native America: State Parks (2011) stated there are currently 35 Oklahoma state parks. The researcher has selected three of the thirty-five states parks as research target sites and one former state park. The second cluster set is the differentiation between a park visitor and park employee. The definition of park employee will apply to those individuals employed at a state park through OTRD or at Quartz Mountain through the Oklahoma State Regents for Higher Education. There are only two possible clusters in this cluster set, as previously defined by the researcher. All clusters are included in the study. This study seeks to understand place attachment and environmental ethics of Oklahoma residents within the state park system. Clusters not described here may emerge as the researcher analyzes data from the research (place attachment, environmental ethics, and demographics).

The process in selection of research subjects (later to be known as or called respondents) is critical in that it allows users and consumers of the research to understand the foundational aspects of the research. To elicit research subjects known as park visitors at each location, the researcher shall approach every other known adult to participate in the study. The selection of every other adult allows for the elimination of duplicating similar results through partnered relationships and families. Upon refusal, the researcher will elicit response from the very next adult and then resume the normal pattern for eliciting research subjects. The researcher emphasizes the need to elicit only adults in order to eliminate the need for parental consent for participation. The process of

approaching every second person for study participation shall continue until an acceptable number of completed surveys are achieved. This process of sampling combines cluster and systematic random sampling procedures. In all parks, there are various nodes or areas for day use, tent camping, RV camping, lodge and cabin accommodations, and recreation areas. The researcher shall attempt to elicit subjects from each area, eliminating the bias that one may encounter by using only one area within the park setting to seek respondents.

Dattalo (2008) suggests the following formula for calculating sample number needed for large populations (N>1000).

$n= [Z^2(p)*(1-p)]/c^2$.

The variable n equals the sample number needed, Z is a confidence level z value, p is a percentage, and c is a confidence interval. The z value for a 95% confidence level is 1.96 (Dattalo, 2008). The p value when estimating sample size needed is .5 (Dattalo, 2008). The confidence interval, c, is the acceptable interval of error expressed as a decimal (Dattalo, 2008). For this study, the researcher has set the confidence interval at ±5 (c=0.5).

As of 2010, the United States Census Bureau (2010) reported that Oklahoma had a population of 3,687,050.The sample is Oklahoma residents that visiting the state parks, with the statistical reference being the population of Oklahoma. The researcher aimed for a 95% confidence level and a 5% confidence interval. Using the formula previously presented, the researcher attempted to complete 384 complete research surveys within this cluster. Please see the calculation below.

$n = [Z^2(p)*(1-p)]/c^2$

$n = [1.96^2(0.5)*(1-.5)]/0.05^2$

$= [1.96^2(0.5)*(1-.5)]/0.05^2$

$=[3.8416*.5*-.5]/0.0025$

$=[1.9208*-.5]/0.0025$

$=-0.9604/.0025$

$n = 384$

To elicit research subjects known as park employees at each location, the researcher shall approach every park employee that is an Oklahoma resident at each location. Due to the entire population within this cluster being small in number, the researcher shall attempt to approach every known full time employee of the park (research site) of which is a known adult. As previously stated, soliciting adults eliminates the need for parental consent for study participation. The researcher is attempting to attain the maximum number of respondents within this cluster, with a goal of complete cluster participation. This process of sampling combines cluster and census sampling procedures. While there are differing opinions on minimum response rates (Ray, 2006) for small sample sizes, Yamane's (1973) is still widely used and considered conservative in statistical procedures.

In *Statistics: An Introductory Analysis*, Yamane (1973) suggests using the following formula for small population sizes when estimating sample size. $n=N/(1+N*E^2)$. In this formula, n represents the sample size calculated, N represents the total population number and E represents the acceptable error rate. Sequoyah State Park employed 15 full time staff in 2010 (Caneday, Chang, Jordan, Bradley, & Hassell, p. 92)

but was reduced to 12 full time staff (T. Presley, personal communication, November 17, 2011). Beavers Bend State Park employed 31 full time staff in 2009 (Caneday, Jordan, Chang, Bradley, & Hassell, p.85) but due to seasonal turnover rate, only 28 full time staff was present during the research timeframe (D. Hammer, personal communication, November 9, 2011) Boiling Springs State Park employed 5 full time staff in 2010 (B. Smith, personal communication, October 24, 2011). Quartz Mountain employed 9 full time staff in 2010 (T. Mosley, personal communication, January 3, 2012). The researcher has set the acceptable error rate at 5% (E=0.05 in Yamane's formula). Please see Table 3-1 for sampling calculations at each research site.

Table 3-1: Research Site Sample Calculations.

Beavers Bend State Park	**Boiling Springs State Park**
N=28 Full Time Staff	N= 5 Full Time Staff
n =28/ $(1+28*0.05^2)$	n =5/ $(1+5*0.05^2)$
n = 26.17	n = 4.93
Sequoyah State Park	**Quartz Mountain Nature Park**
N=12 Full Time Staff	N=9 Full Time Staff
n =12/ $(1+15*.05^2)$	n =9/ $(1+9*0.05^2)$
n =11.65	n =8.80

In order for a sample to approach the ability to represent the population, there are several important factors to consider. The sample must represent the population and its important aspects. For this research, the study must represent the population of Oklahoma. The important aspects are the aforementioned clusters. Therefore, the target completed surveys of the state parks are 28 for Beavers Bend State Park, 12 for Sequoyah

State Park, and 5 for Boiling Springs State Park, resulting in a 100% return rate. Statistically, having 26 for Beavers Bend, 12 for Sequoyah, and 5 for Boiling Springs is sought. The target number of completed surveys for Quartz Mountain is 9, attaining a 100% return rate, with 9 surveys being sought as a minimal number for statistical analysis. Naturally, the sample should be drawn from a specific probability or random process. This study meets these criteria.

The researcher acknowledges bias in that there are various specifically excluded portions of the population. The researcher excludes Oklahoma residents not present at the selected site during the research process from the study. This eliminates Oklahoma residents that visit non-selected sites throughout the duration of the study. This process also eliminates Oklahoma residents that visit the selected sites during times that the research is not being conducted at the designated site. This process also eliminates all potential respondents designated as non-residents in Oklahoma and those residents of Oklahoma who do not visit a state park or Quartz Mountain.

In an effort to maximize time and attain representative samples, the researcher will intentionally seek out visitors of diverse groups. These groups include, but are not limited to: persons with various disabilities, social class, females, and all persons of cultural, ethnic, and racial makeup that is not white, Caucasian, or non-Hispanic. Furthermore, the researcher aims to elicit data from visitors that represent all areas of formal education, household income, visitor role, length of association with the research site, and age.

In addition, the sampling procedures eliminate all park employees that are not present at the selected sites. There are 32 Oklahoma parks not represented in the

employee portion of the study. Within each sample cluster, there is a target number of respondents. This target number or research participants represents the minimal number needed to accurately generalize to the population. In efforts to collect the needed amount of information (no too little or too much information), a target for each population cluster is required to make maximum use of time and resources. The target goals also represent the number of complete surveys needed to meet the statistical tests of generalization.

Data Collection & Instrumentation

The researcher shall use survey methods for data collection. This method is employed to elicit specific information; demographic information, levels of place attachment, and current status of ethics related to the environment. The researcher employs the quantitative method in an attempt to obtain a breadth of information, enabling the researcher to make broad conclusions about the population from the sample.

Quantitative Instrumentation

The quantitative instrument that the researcher will employ is divided into three sections. The first section is the demographic section, seeking to attain demographic data from the research participant. The second section is the place attachment section, seeking to attain information related to place attachment, with sub-dimensions of place dependence and place identity. The third and final section of the instrument is the environmental ethics section. The environmental ethics section attempts to attain information that may allow the researcher to understand the current personal ethics in consideration of the environment.

Demographic Data

Demographic data, data that contains various characteristics of a population, shall be collected within both the quantitative and qualitative instruments in this research study. The researcher will use the demographic data collected from the research participants to help make appropriate inquiries related to the various demographic variables. The demographic questions contained within both the quantitative and qualitative instruments were formed in reference to the United States 2010 Census form. The full form of the quantitative demographic instrumentation may be viewed in the appendices, please refer to Appendix A, B, C, and D. Not all demographic information elicited in the 2010 U.S. Census is included in the instrument, as some of the demographic questions did not pertain to the necessary information for this study.

In addition to 2010 United States Census questions, the researcher inserted additional questions related to the status of the respondent to the state park. For each research participant this study seeks to know if the person is a state park visitor, or a state park employee. Complimenting these questions, are secondary questions to each aspect, noting the type of visitor (camper, cabin guest, day use visitor, etc.) and type of state park staff (management, maintenance, etc.). The research needs this information to accurately investigate any differences that may exist when these populations are compared. To view the full instrument, please refer to Appendix A, B, C, or D for each state park research site.

Place Attachment

The place attachment section of the instrument is a section designed to elicit place attachment information from the research participant. As formerly discussed in chapter 2

of this document, the researcher found several published instruments to test place attachment. In consideration of many factors, the researcher opts to use a modified version of the Williams & Vaske (1993, 2003) Place Attachment design. The Williams & Vaske model is one that is used throughout currently published research related to place attachment and sense of place constructs and theories. The Williams & Vaske model recently underwent several testing procedures to assess factor validity, convergent validity, and variance components estimates. Using confirmatory factor analysis to test factor validity, the researchers analyzed two models; one model using a single dimension structure and the other model using a two-dimension structure.

In all analyses, the $\Delta\chi^2$ ($\chi^2 \geq 43.69$, $P<0.001$) indicated a better instrument fit to the data when considering the two-dimensional structure over the single dimension structure (Williams & Vaske, 2003, p. 834). Furthermore, the researchers note that other goodness of fit measurements met or exceeded the necessary statistical ranges for assurances that the instrumentation and model used fit the data. The entire instrument attained a Cronbach's alpha of 0.83, where 0.83 indicates a good internal consistency. While levels of acceptability range, a calculated Cronbach's alpha above 0.9 is considered excellent, 0.8-0.9 is considered good, 0.7-0.8 is acceptable, with everything below 0.7 being questionable or unacceptable (Pedhazer, 1997). To review, the researchers indicate that the two-dimension place attachment model is a better fit to place attachment data than is a single dimension model. Furthermore, there is high level of internal consistency which is supported by a Cronbach's alpha located in the "good" range. This analysis results in the two-dimension model being supported in several ways over the single dimension

model. Thus, place attachment has support of containing the two sub-dimensions of place identity and place dependence.

The idea of convergent validity is to show that the instrumentation tests what it theoretically should test. This is a strong indicator of construct validity. The basic premise of construct validity is to test and assure the accurate measurement of the idea or concept grounded in theory. To do so, testing of the variances using ANOVA is an acceptable route to analyze data to assure convergent validity. Williams & Vaske (2003) conducted a study with several samples, to test convergent validity. The F ratios for place identity met or exceeded significance levels in each of the four samples. They ratios met or exceeded levels of significance ($F \geq 3.57$, $p \leq 0.034$ minimum level reached).

Variance components of the samples also allow for the researcher to understand how well the model fits the data, and attain a level of generalizability. The variance for the instrument when analyzing the instrument as a single dimension model attains a variance of 22.6%, which is rather high. This may be interpreted as meaning the single dimension model is not a good fit for the data. When taken in a two-dimensional model, however, the variance levels are 6.3% and 3.6% for place identity and place dependence respectively. This brings the total variance of the two-dimensional model to 9.9%, much lower than the 22.6% attained for a single dimension model.

Using a random effects model, the researchers were able to show large variance by components, meaning the four areas where samples were attained show significant variance in place identity and place dependence. This makes sense in that the participants showed different levels of place attachment at the four different locations examined.

To summarize, the two dimension model clearly outperforms the single dimension model, thus clearly mandating a two dimension model be used in future research. Furthermore, it is shown that items within the two dimensions have low variance components, making the two dimensions generalizable across various items. The researchers also proved, through increasing the number of items in the instrument beyond six did little to improve the generalizability, as the coefficient for generalizability rose sharply between one item and six items (0.518 to 0.869, 0.670 to 0.924) than it did from six to ten items (0.869 to 0.916, 0.924 to 0.953).

While other instruments to measure place attachment are published and used throughout the various fields of research, no researcher has yet to attain the notoriety and statistical advantages that the instrument does within several settings. For that reason, combined with the ability of the instrument demonstrated here, this research project will use a modified version of the Williams & Vaske (2003) instrument.

Table 3-2: Place attachment instrumentation sample.

	Strongly Agree	**Agree**	**Unsure**	**Disagree**	**Strongly Disagree**
1. I feel Sequoyah State Park is a part of me.	5	4	3	2	1
2. Sequoyah State Park is very special to me.	5	4	3	2	1
3. I wouldn't substitute any other area for doing the types of things I do at Sequoyah State Park.	5	4	3	2	1
4. The things I do at Sequoyah State Park I would enjoy doing just as much at a similar site.	5	4	3	2	1

Table 3-2 shows a short sample of the Sequoyah State Park version of the quantitative instrumentation used to attain place attachment data. As you may see, four

questions are included, two each for place identity and place dependence. The questions are answered using a five point Likert scale style. Modifications are only made to adjust the model for the places used as research sites in the study. In this figure, the term "Sequoyah State Park" was inserted into a generic form of the instrument where "xxxx" once was. A full version of the modified instrument that will be used throughout the research may be seen in Appendix B.

Environmental Ethics

The original New Environmental Paradigm (NEP) scale by Dunlap and Van Liere began being used in the late 1970s as a means to attain data related to an individual's environmental behavior. The instrument put forth by the two researchers was widely used in a significant number of studies that ranged in philosophy, focus, and research interest. Through many studies, the original NEP attained known-group validity by attaining higher scores by those behaving in environmentally friendly manners (Widegren, 1998; Edgell & Nowell, 1989). The NEP also attained success in predictive validity in that it was able to accurately attain higher scores for individuals that reported pro-environmental behaviors beyond the NEP instrument through other researcher methods (Vining & Ebreo, 1992; Blake, Guppy, & Urmetzer, 1997). In that the original NEP garnered support for predictive and known-group validity, it may be said the NEP possesses criterion validity (Zeller & Carmines, 1980, p79-81; Dunlap, Van Liere, Mertig, & Jones, 2000).

As with the place attachment research instrument, various dimensionality of the NEP has been tested for single and multiple dimensions as a constructed instrument. The

multidimensionality of the instrument, if it exists, may aid researchers in fully understanding the information attained from research participants. The research of Noe & Snow (1990) and Geller & Lasley (1985) lead to the suggestion that the NEP contained three dimensions: balance of nature, limits to growth, and human domination of nature. In fact, later studies often measure each dimension separately from the other (Vining & Ebreo, 1992).

In a range of various research studies, there is inconsistency that appears to arise, as many studies only find the NEP to contain a single dimension, while other studies have sought out several dimensions, only to find one or two dimensions within the data attained. Still, other research finds up to three and four dimensions within the information gained from using the instrument. This leads to the conclusion that, without reliable data, a researcher should treat the NEP scale is a single dimension instrument when developing research specific instrumentation. Further investigation, after the data is gathered, might allow for the investigation for a multiple dimension instrument.

Although the NEP garnered support as a valid instrument to attain data related to personal environmental views, as the years passed it became aged and more studies alluded to the need for crucial updates within the instrument. Concerns were raised as to the direction or trend toward positive environmental statements in the original NEP. Issues were also raised as to the aged wording of the various statements. Certain statements contained words that were deemed too difficult for most respondents (imminent, capsule), while other words appeared too often (ecological), and yet some words were simply dated (mankind). In their newly revised New Ecological Paradigm (new NEP), Dunlap and Van Liere addressed each of these concerns.

Analysis

It must be stated that the researcher entered all data into a computer program to aid in analysis, that program being PASW Statistics 18. This program is the premier program used for quantitative analysis in all fields of study. While other programs exist, PASW Statistics 18 is the one used commonly at Oklahoma State University, which owns and continually updates licenses for continual use. Upon completion of entering all data into the matrix to be used by the computer program, the researcher employed a variety of statistical procedures to test for various specifics.

To begin the quantitative investigation, the researcher analyzed the descriptive statistics. The researcher used the analyzed descriptive statistics to define the basic features of the data in this study. As one becomes familiar with the descriptive statistics, one may better understand the entire study as a concept, allowing for an overarching theme to present itself for the research.

The next statistical procedure is to run the Pearson's chi-square test. This test is used to determine goodness of fit and independence of data. The goodness of fit test allows the researcher to remark how well the collected data meets the expected distribution, in other words, how well does the collected data resemble a perfect bell curve distribution. This test shall be completed for each variable collected in the quantitative data. The data must be collected independently and be mutually exclusive, meaning that no samples are collected simultaneously, with influence of the other sample, and each variable has equal chance of being selected (Placket, 1983). There are four common assumptions when using the Pearson's chi-square test. The first assumption is that the sample is random, which this study meets through the sample selection process.

The second assumption is that the sample size is sufficient enough, adequately robust, to enable the statistic to work properly. The researcher exceeded expectation of 384 total respondents, and the second assumption was met. The third assumption is stated as expected cell count. This assumption requires a significant number of occurrences for each variable, meaning that a minimum number of occurrences need to be present. If the minimum numbers of 384 respondents complete the entire quantitative survey, the study meets this assumption. The fourth and final assumption is independence, meaning each respondent and completed survey is collected independently (without influence) from other solicited respondents. This research study meets that criterion through the sampling procedure. Upon completion and validation of an expected normal distribution and independence, the researcher shall move forward with other statistical analysis (Greenwood & Nikulin, 1996).

The next statistical procedure that the researcher conducted is the analysis of variance (ANOVA). ANOVA calculations use the means of the statistics to determine variability within a group, or between groups of data. The benefit to using ANOVA versus t-tests is that t-tests compare only two means at a time, while ANOVA is a more robust procedure, allowing for multiple group means to be analyzed at once (Tabachnick & Fidell, 2001). When using ANOVA statistical methods, there are three assumptions that must be met in order to proceed with calculation. The first assumption is independence, meaning each respondent to the instrument was not influenced by other respondents, and that no respondent was used more than once. The second assumption is normality, which is fulfilled through the previous statistical procedure, the Pearson chi-square. During the ANOVA calculations, the researcher shall employ another statistical

procedure to test for normality, the Kolmogorov-Smirnov D test, which is a goodness of fit test (Tabachnick & Fidell, 2001). The final assumption, homogeneity, requires that variances of the grouped data are similar. This assumption may be attained through proper sampling procedures, randomization of elicitation of respondents. The researcher shall employee a statistical procedure to test for homogeneity. The Levene Test, a conservative test to ensure homogeneity shall be used during the ANOVA procedure (Tabachnick & Fidell, 2001).

The last statistical package the researcher employed is the use of multiple regression. The basis of multiple regression analysis is to find the best formula to accurately relate a variety of variables. A dependent variable is selected along with a variety of independent variables, and upon completion of the statistical package, a formula presents the best possible relationship between the entire independent variable set and the dependent variable. This technique is used to show the predictability of the dependent variable when the independent variable(s) are known.

There are four common assumptions that are required to use multiple regression. The four assumptions are that variables are normally distributed, the linear relationship between the independent variable and the dependent variables, measurement reliability, and homoscedasticity. Testing of the normal distribution has occurred twice thus far in the analysis, once with a Pearson Chi Square test and one with a Levene Test during ANOVA testing. To ensure the linear relationship between the independent variable and the dependent variables, there are two methods to employ. The first is to refer to the literature where these methods are used. The second is to investigate the scatterplots when comparing the studentized residuals (y axis) and the predicted dependent variable

(x axis). Such plots will allow the researcher to note if the values show a linear pattern or a curve or non-linear pattern (Pedhazur, 1997).

To ensure the variables are measured without error, otherwise known as reliable measurement, is also an assumption when using multiple regression. Reliability estimates are made within the regression analysis, known as Cronbach alphas. While the acceptable limits vary depending on the source cited, general acceptable levels are 0.7 (Nunnally, 1978) and 0.85 (Osborne, Christensen & Gunther, 2001). The fourth assumption of multiple regression is homoscedasticity. This means that the variance of the errors is congruent on all levels of the independent variables used. Homoscedasticity may also be checked by visual inspections of the same scatter plots mentioned when testing for linear relationship. While the scatter plot may reveal that the relationship is linear in nature, the researcher must be persistent to avoid bottle-necked and conical shaped scatter plots, resulting in heteroscedasticity (Osborne, Waters & Water, 2002). The scatter plots should be linear and cylindrical in nature. The scatter plot dots should form a cylinder in a horizon style patter midway up the y axis (Pedhazur, 1997). This research project shall meet all these assumptions.

In multiple regression, the value of the dependent variable (Y) varies with the fluctuation of the independent variable(s), known as X_n. Depending on the number of variables selected and the type of regression used; formulas obtained may contain one or more independent variables. A sample regression formula might be: $Y = X_1 + X_2 + X_3 + b$. In this formula, Y denotes the dependent variable and the various X_n notations represent the independent variables. The notation b represents the slope of the regression

line, or the base for which the dependent variable starts. If all independent variables are unknown, the value of b may predict a very rudimentary dependent variable value.

The researcher shall employ the backwards regression analysis for this study. The backwards regression procedure allows for the researcher to put in a significant number of independent variables, and many versions of the regression are conducted. With each additional analysis, the most statistically insignificant independent variable is released from the statistical procedure. Only independent variables that do not attain significant factor levels are subtracted from the equation. The end result is a multiple regression equation that only includes significant independent variables and thus results in a stronger prediction equation (Pedhazur, 1997).

Chapter Summary

This research study aims to attain data from respondents at four state parks in Oklahoma. The sites selected are Sequoyah State Park, Boiling Springs State Park, Beavers Bend State Park, and Quartz Mountain Resorts Arts and Conference Center. The population to be sampled includes visitors to the state park system and employees within the Oklahoma Tourism and Recreation Department, which houses the Division of State Parks. Data collection will be done through quantitative methods. A questionnaire will serve as the instrument to obtain data via quantitative. The researcher shall conduct the data analysis according to the methodology, with the quantitative analysis relying on statistical packages to note differences and relationships of the data set.

Chapter IV

Results

In this chapter, the results of this research study are presented in a manner to aid in understanding the depth and breadth of the data attained. Due to the significant amount of data collected, the researcher seeks to present this information in a guided format to allow the reader to follow through the results process with the researcher. After summarizing instrument changes and data collection schedules, the researcher will describe the descriptive and frequency statistics to aid the reader in understanding the research participants.

The researcher employed a place attachment portion of the entire survey, a modified version of Williams and Vaske's (2003) place attachment instrument, used to measure place identity and place dependence. The modified version contained twelve questions, with six questions in each of the two sub-dimensions. The researcher used a non-modified instrument to measure environmental ethics, an instrument called the New Ecological Paradigm Model by Dunlap, Van Liere, Mertig, and Jones (2000). To measure the agreement or disagreement with the outdoor recreation initiatives, the researcher constructed a five point Likert-scale instrument, with each of the ten outdoor initiative statements being ranked from one to five by the participant. The researcher will present the descriptive and frequency statistics of the instruments used to solicit opinions

related to place attachment, environmental ethics, and the outdoor recreation initiatives. After the presentation of the core material, the researcher will discuss how analysis of variance (ANOVA) and multiple linear regression was used to understand and respond to the research questions initially proposed in chapter 1. The researcher used ANOVA to differentiate statistically different groups in regards to a specific variable. Regression formulas present models to aid in the prediction of dependent variables when certain independent variables are known.

Procedural Modifications

It is important to know that certain modifications where made before and during data collection. Due to time constraints, the qualitative model that was originally planned to be included in the data collection process was eliminated. After this alteration was made, the research study was completely quantitative in as far as the data collection. This modification enabled a more efficient data collection, which enabled success of this research project. The researcher seeks to utilize qualitative methods to better understand place attachment in a future study.

Data Collection

The researcher made twelve total trips to the four selected research sites, with a total of 34 days of data collection. The selected data collection sites were Quartz Mountain Nature Park, Beavers Bend State Park, Sequoyah State Park, and Boiling Spring State Park. The researcher visited Quartz Mountain Nature Park on two trips, on January 3, 4, 5, 11, 12, and 13 in 2012. The researcher collected data at Quartz Mountain Nature Park for a total of six days. The researcher visited Beavers Bend State Park on one trip in the fall from November 9 to 14 in 2011. The researcher collected data at Beavers

Bend State Park for a total of six days. The researcher collected data at Sequoyah State Park for a total of thirteen days. The researcher visited Sequoyah State Park five times. The researcher collected data on November 17-18, November 29-30, December 1-3, and December 9-11 in 2011 and from January 19-21 in 2012. The researcher collected data at Boiling Springs State Park for a total of nine days during four trips. The researcher visited Boiling Springs State Park on December 14-16 and 29-30 in 2011 and from January 6-8 and 14-15 in 2012.

Table 4-1: Data collection schedule.

Date	Park	Days
November 9-14	Beavers Bend	6
November 17-18	Sequoyah	2
November 29-30	Sequoyah	2
December 1-3	Sequoyah	3
December 9-11	Sequoyah	3
December 14-16	Boiling Springs	3
December 29-30	Boiling Springs	2
January 3-5	Quartz Mountain	3
January 6-7	Boiling Springs	2
January 11-13	Quartz Mountain	3
January 14-15	Boiling Springs	2
January 19-21	Sequoyah	3

Population & Sample Size

As stated in Chapter 3, Dattalo (2008) notes the following formula for calculating sample number needed for large populations (N>1000): $n= [Z^2(p)*(1-p)]/c^2$. The variable n equals the sample number needed, Z is a confidence level z value, p is a percentage, and c is a confidence interval. The z value for a 95% confidence level is 1.96 (Dattalo, 2008). The p value when estimating sample size needed is .5 (Dattalo, 2008). The confidence interval, c, is the acceptable interval of error expressed as a decimal (Dattalo, 2008). For this study, the researcher has set the confidence interval at ±5 (c=0.5). The

United States Census Bureau (2010) reported that Oklahoma had a population of 3,687,050. The sample is Oklahoma residents that visit the state parks, with the statistical reference being the population of Oklahoma. The researcher aims for a 95% confidence level and a 5% confidence interval.

To achieve a 95% confidence level with a ±5 confidence interval when considering the entire population of the state of Oklahoma, a sample of 384 completed surveys is needed. The researcher achieved this limit by completing 403 surveys. The response rate of the four research sites varied slightly, ranging from 42.97% to 65.06% with a completed survey total of 403. Specifically, the calculated confidence interval at a 95% confidence level with a sample size of 403, a population of 3,687,050, and a survey completion percentage of 56.68, the confidence interval is calculated to be 4.84. This means that with the sample size, we are able to say we are 95% certain, with a ±5% margin of error, that our sample accurately represents the total population.

Due to the sampling methods, the researcher may include statistics that use the total sampled population of 711 possible participants as a consensus of the visitors and employees at the research sites. Using 711 as the total population and considering there are 403 completed surveys, the confidence level of the researcher reaches 99% with a 4.19 confidence interval. Due to the nature of the sampling process, these numbers will not be used are for consideration purposes only.

The importance of attaining a 95% confidence level with a ±5 confidence interval is that, utilizing statistical analysis, we may accurately make assumptions regarding the entire population from the sample. Based on the findings within the sample, we may assume the same to be true within the population (Joanes & Gill, 2002).

The total number of employees at the state park research sites varied, with a 100% response rate from all employees from Beavers Bend State Park (N=28) and Quartz Mountain Nature Park (N=9). Sequoyah State Park (N=11) had a 91.66% response rate, with 11 of the 12 employees returning a completed survey. Boiling Springs State Park, without specific known reasons, returned 0 completed surveys from employees, with a known full time employee count of 5 in 2010 (B. Smith, personal communication, October 24, 2011). In Statistics: An Introductory Analysis, Yamane (1973) suggests using the following formula for small population sizes when estimating sample size. $n=N/ (1+N*E^2)$. In this formula, n represents the sample size calculated, N represents the total population number and E represents the acceptable error rate. The total number of state park employees at the four research sites is 54. According to Yamane (1973), a total of 47.57 completed surveys are needed (see calculation below) to achieve a 95% confidence level with a ±5 confidence interval. During the research study, a total of 48 surveys were completed from state park employees. While the minimum number needed is achieved and thus statistical analysis may be interpreted, such interpretation may be completed with caution in that one research site, Boiling Springs State Park, yielded zero completed surveys.

The researcher completed a total of 403 surveys during on-site data collection. The number of surveys completed at each research site varied, with 13.6% of the surveys being completed at Quartz Mountain Nature Park (N=55), 32.8% of the surveys being completed at Beavers Bend State Park (N=132), 43.4% of the surveys being completed at Sequoyah State Park (N=175), and 10.2% of the surveys being completed at Boiling Spring State Park (N=41).

Table 4-2: Research site data collection response ratios.

Park	Respondents Approached	Respondent Rejections	Surveys Completed	Response Rate
Quartz Mountain Nature Park	128	73	55	0.43
Beavers Bend	232	100	132	0.57
Sequoyah	269	94	175	0.65
Boiling Springs	82	41	41	0.50
Total	711	308	403	0.57

Normality Testing

The researcher tested every variable in the entire research instrument for skewness and kurtosis, to ensure appropriate interpretation of the population for the ensuing statistical analysis. The range of acceptable skewness is an absolute value of less than three (Jones, Rosco, & Pewsey, 2011). Only two variables included in the study did not meet the normality testing, with kurtosis and skewness numbers beyond absolute three. Latino Ethnicity or Origin and Race had skewness of 11.84 and 4.33 respectively. These two variables had a kurtosis of 153.47 and 29.13 respectively. It is important to note that these two variables did not have equal distributions of responses, and thus did not reach normality.

Descriptive & Frequency Statistics

A total of 403 participants completed the research survey. A total of 48 state park employees and 355 visitors completed the survey, making the percent of visitors and employees that participated at 88.1 and 11.9 respectively. The researcher opted to further differentiate between state park visitors and employees by inquiring as to their roles within these two categories, offering five categories of a state park visitor and eight categories of a state park employee or staff member.

In what may be attributed to the season or weather patterns during the research data collection process, the type of visitor responding the survey was different than

anticipated. Day users made up a majority of the respondent pool (28.3%), followed by RV Campers (22.1%), Lodge Guests (19.6%), Tent Campers (12.7%), and Cabin Guests (5.7%). In review of discussions with state park employees, RV and tent camping are the two most popular activities at the parks (T. Presley, personal communication, November 17, 2011), which is not shown in the respondent pool. It may be stated that during the non-peak season, visitors are mostly day users. Two special events happening during data collection times might have affected the visitor type being a day user.

Table 4-3: Research respondent roles ratios.

Role	Percent	N
Visitor – Cabin Guest	5.7	23
Visitor – Lodge Guest	19.6	79
Visitor – Tent Camper	12.7	51
Visitor – RV Camper	22.1	89
Visitor – Day User	28.3	114
State Park Staff	4.2	17
Maintenance Staff	1.0	4
Lodge Staff	1.2	5
Golf Course Staff	1.0	4
Seasonal Staff	0.7	3
Management	2.2	9
Administration	0.5	2
Law Enforcement	0.7	3
Total	100.0	403

The 2011 Folk Festival and the 2012 Bluegrass Festival were going on (Beavers Bend State Park and Sequoyah State Park respectively) during data collection times. This might have affected the type of visitor that responded to the research process. Without inquiring as to the reason for their visit, this is only speculation and further research is required to accurately understand whether such special events change makeup of the visitors.

Employees of the research sites were included in the survey process, and accounted for an accumulated 11.5% of the total respondent pool. While most of the employee respondents marked “state park employee” as their role, the majority of the employees were in some type of staff role (8.8%, N=36). Eleven of the respondents (2.7%) selected management or administration as their role within the employee category. Of the 47 total employees that responded, 76.6% were in a staff role and 23.4% were in a management or administration role. It should be noted that no employee surveys were collected at Boiling Springs State Park during this research study.

A total of 403 participants responded to a question eliciting the distance the participant traveled, one way, to reach the state park research site. The answer was open ended, meaning the participant was not limited to categories or selected choices. All answers were numerical and whole numbers, with a range from 1 to 400. The average distance traveled to the state park was 83.27 miles. The miles traveled statistic had a standard deviation of 73.332.The median miles traveled was 60.0 and the mode was 40.0; these representations might characterize the true mileage traveled as it eliminates the exceptionally short or exceptionally long distances traveled.

All participants were asked their length of time they have been associated with the park they were visiting, by asking how long it had been since the first time they ever visited the park (research site). Answers were available through categories that were broken down into seven categories of time. All 403 research participants answered the question.

When using 60 miles as the best representation of the average miles traveled to a state park, one may assume that the average visitor represented at the research sites are

from rural areas, as only one park is within 60 miles distance from an urban center; Sequoyah State Park is approximately 50 miles northeast of the Tulsa urban area.

Table 4-4: Approximated mileage from research sites to major cities in Oklahoma.

	Oklahoma City	Tulsa	Lawton
Boiling Springs	141	199	177
Sequoyah	152	50	237
Beavers Bend	248	210	251
Quartz Mountain	141	247	73

Table 4-5: Length of association with research site in years.

Time Associated	Percent	N
Less than 1 Year	13.6	55
1-2 Years	14.6	59
3-5 Years	25.3	102
6-10 Years	23.8	96
11-25 Years	11.7	47
26-50	10.4	42
51+ Years	0.5	2

The majority of the response ranged from 3 years to 10 years of length of association. A total of 198 (49.1%) of the participants responded at their length of association was between three and ten years. The length of time of association of four other categories was relatively congruent, considering the four time categories of less than 1 year, 1-2 years, 11-25 years, and 26-50 years. The length of time associated with the park had one category that elicited less than 1% (0.5%) of responses, the category of 51 years and longer. Visitors to the parks that did not have at least a 3 year association with the park made up about 28% of the respondent population. The time associated with the parks selected as research sites appears to be realistic and understandable. The length of association increases as adults grow older, up to the point where the adult may not have the ability to continue visitation. In that the majority of the respondents had some

previous visitation translates to the fact that repeat visitation is common and that visitors continually use known parks as recreation sites.

A total of 403 participants responded to the questions inquiring as to household income. The income per household varied through the six pre-selected income categories. Most participants, 49.1%, selected an income of less than $50,000 (N=198). As one merges categories, it emerges that 81.9% of respondents have a household income of less than $75,000. The majority or responses related to household income ranged from $25,000 to $74,999. This aligns with statistical data from the 2010 U.S. Census, in that the median household income was $41,664 in the state of Oklahoma (U.S. Census, 2010). The remaining 18.1% of respondents reported an annual household income of $75,000 or greater.

For household incomes of greater than $75,000, the visitation to the state parks was drastically reduced, and there was reduced visitation from household whose income was less than $25,000. The middle income households visit Oklahoma's state parks more often, signaling that potential visitors from the other income brackets are seeking experiences elsewhere or not seeking experiences offered by state parks. All research participants responded to the question eliciting the level of formal education they have received or achieved. The respondents chose one of seven categorical choices, ranging from less than high school to a variety of higher education options. The number of respondents (46.2%) selected high school or equivalent as the highest level of education received was 186. A majority of participants, 90.8%, responded that they ranged from a high school education to a Bachelor's degree education (N=366). All other education levels were selected in relatively low numbers. Potential visitors with advanced degrees

are not visiting natural resource sites, state parks, for their outdoor recreation experiences.

Table 4-6: Respondents' household income ratios.

Household Income	Percent	N
Less Than $25,000	10.7	43
$25,000-$49,999	38.5	155
$50,000-$74,999	32.8	132
$75,000-$99,999	10.4	42
$100,000-$124,999	4.0	16
$125,000 or More	3.7	15

Table 4-7: Respondents' highest level of education ratios.

Education Level	Percent	N
Less Than High School	3.7	15
High School or Equivalent	46.2	186
Associate Degree/Some College	16.1	65
Bachelor's Degree	28.5	115
Master's Degree	3.7	15
Professional Degree	0.7	3
Doctoral Degree	1.0	4

Table 4-8: Respondents' Cultural Origin response ratios.

Cultural Origin	Percent	N
Not of Latino Origin	99.0	399
Yes, Mexican	0.7	3
Yes, Puerto Rican	0.2	1

A majority (99.0%) of the respondents were not of Latino or Hispanic origin (N=399) and were white (84.6%, N=341). The U.S. Census (2010) found Oklahoma to be primarily white (72.2%) and primarily non-Hispanic (67.7%). In this research study, the sampled population does not accurately reflect the population of the state. While certain measures were taken to ensure proper collection and participation from all races and ethnicities, state park visitors do not reflect the demographics of Oklahoma in regards to

race and ethnicity. About 7.4% of Oklahoma's population is reported as Black, but only 2.0% of survey respondents reported to be such. While Oklahoma's population is reported to be 8.6% American Indian or Alaska Natives, the research study included 49 (12.2%) respondents indicating themselves as such. The majority of state parks visitors are white and non-Hispanic. Beyond American Indians and Native Alaskans, non-White races and cultures are not visiting these parks in equitable numbers.

Table 4-9: Respondents' Race response ratios.

Race	Percent	N
White	84.6	341
Black, African America, or Negro	2.0	8
American Indian, Alaska Native	12.2	49
Asian Indian	0.5	2
Japanese	0.2	1
Korean	0.2	1
Filipino	0.2	1

While this research study elicited 12.2% of respondents that self-identified as American Indian or Native Alaskans, such a statistic may not immediately be interpreted to be vastly different from the U.S. Census data of 8.6%.

Research respondents were mostly male (60.3%, N=243) and over the age of 35 (80.9%). Females made up 39.7% (N=160) of the response pool and respondents under the age of 35 composed 19.1% of the total response. The general Oklahoma population is 50.5% female and 49.5% male (U.S. Census, 2010).

In general, the participant pool age categories that most participants chose were the older categories. The researcher believes the percentages of the respondent pool in regards to sex are an accurate representation of the visitation to the research sites. While

the margin may not be significant, more males than females visit state parks and natural resource areas.

Table 4-10: Respondents' sex response ratios.

Gender	Percent	N
Male	60.3	243
Female	39.7	160

The age bracket that was least represented by the research participants was the early adulthood age bracket, ages 18-24. Only 4.0% (N=16) of the respondent pool fell within this range. All other age brackets were represented equitably, and in general more respondents were present in the older age brackets. Visitors to the state parks in Oklahoma are more likely to be older adults, with senior adults (65+ years) being the majority (24.1%). Over 60% (62.5%) of the researcher respondents were over the age of 44.

Table 4-11: Respondents' age response ratios.

Age	Percent	N
18-24	4.0	16
25-34	15.1	61
35-44	18.4	74
45-54	17.6	71
55-64	20.8	84
65+	24.1	97

This may mean that young adults did not seek out state parks for their recreation experiences and resources. The researcher was unaware that the largest percentage age bracket would be "65+" and thus might consider altering how age is elicited, allowing for more options on the older end of the age bracket.

Place Attachment

The place attachment instrument used was a modified version of Williams and Vaske's (2003) two-dimensional place attachment model. The modifications made were slight in that the researcher only made changes to use the correct place name, in this case the name of the state park research site. The place attachment instrument contained twelve total questions, six questions in each of the two sub-dimensions of place dependence and place identity. Question twelve was reverse coded in that the statement was a negatively arranged item when compared with the other eleven items in the instrument. The researcher included six questions to elicit information related to place identity. The six place identity questions are featured in Table 4-12, as they appeared on the Boiling Springs State Park version of the research study instrumentation.

Table 4-12: Place identity statements from the Boiling Springs State Park instrument.

Place Identity Statements
I feel Boiling Springs State Park is a part of me.
Boiling Springs State Park is very special to me.
I identify strongly with Boiling Springs State Park.
I am very attached to Boiling Springs State Park.
Visiting Boiling Springs State Park says a lot about who I am.
Boiling Springs State Park means a lot to me.

The researcher calculated the frequencies related to the responses elicited per each place attachment statement. A percentage statistic was calculated to offer a better idea of how each response faired within the specific place attachment statement. Please see Appendix A, B, C, or D and refer to questions one through six within the place attachment instrument of each research site survey to familiarize yourself with each version of the place identity statements.

In each of these six statements, respondents chose ‘agree’ as an option most often, choosing ‘agree’ nearly 50% of the time in each of the six statements (50.1, 46.9, 50.6, 45.4, 46.2, & 48.1). Furthermore, the percentages of respondents agreeing with each statement, choosing either agree or strongly disagree, is overwhelmingly higher in percentage (61.5, 74.4, 67.7, 67.2, 65.6, & 71.7). The percentages of respondents disagreeing with each statement, choosing either disagree or strongly disagree, is quite low, and percentages combining the two categories prove that (32.0, 22.8, 23.6, 28.8, 24.0, & 25.5).

Table 4-13: Place dependence statements from the Sequoyah State Park instrument.

Place Dependence Statements
Sequoyah State Park is the best place for what I like to do.
No other place can compare to Sequoyah State Park.
I get more satisfaction out of visiting Sequoyah State Park than any other.
Doing what I do at Sequoyah State Park is more important to me than doing it in any other place.
I wouldn’t substitute any other area for doing the types of things I do at Sequoyah State Park.
The things I do at Sequoyah State Park I would enjoy doing just as much at a similar site.

The researcher included six questions to elicit information related to place dependence. Please see Appendix A, B, C, or D and refer to questions seven through twelve within the place attachment instrument of each research site survey. For the following analysis, the researcher will refer to these place attachment statements as Place 7 through Place 12 for ease of documentation. The six place dependence questions are feature in Table 4-13, as they appeared on the Sequoyah State Park version of the research study instrumentation.

The researcher calculated the frequencies related to the responses elicited per each place attachment statement. A percentage statistic was calculated to offer a better idea of

how each response faired within the specific place attachment statement. Please see Appendix A, B, C, or D and refer to questions one through six within the place attachment instrument of each research site survey to familiarize yourself with each version of the place identity statements. It is important to remind the reader that question twelve was reverse coded in that the statement was a negatively arranged item when compared the other eleven items in the instrument.

In each of these six statements, respondents chose ‘agree’ as an option most often, choosing ‘agree’ a majority of the time in questions seven through eleven with the respective percentages; 37.2, 35.7, 40.0, 36.0, and 32.8. Question twelve had a different response rate, with ‘unsure’ garnering a majority of the selection at 30.8%. The percentage of respondents agreeing with each statement, choosing either agree or strongly agree, is not as overwhelmingly higher (48.9, 46.6, 49.4, 45.2, 40.5, and 31.0) than that of the percentages of respondents disagreeing with each statement, choosing either disagree or strongly disagree (33.0, 30.8, 34.2, 36.3, 36.0, and 38.3).

Questions seven through eleven had higher percentages of agreement than disagreement with the place attachment statements. Question twelve, the one statement that had to be reverse-coded also reversed this pattern, and the disagreement with the statement was higher in percentage than the agreement. Research respondents also chose the option ‘unsure’ more often in statements seven through twelve, resulting in higher percentages of each statements total response (18.1, 22.6, 16.4, 18.6, 23.6, and 30.8).

To calculate the mean place attachment score for each place attachment statement, the individual participant scores were summated for each place attachment statement and divided by 403. Place attachment statements 1 through 12 had means in the range of 2.89

to 3.70. A score of 2 meant the participant disagreed with the statement, a score of 3 denoted the participant was unsure if they agreed or disagreed with the statement, and a score of 4 denoted they agreed with the statement. Six of the twelve statement scores (7-12) may be rounded to a score of 3 while the remaining six (1-6) would be rounded to a score of 4. These scores indicate a higher level of agreement with place identity measures than was shown with place dependence measures.

Table 4-14: Average scores per place attachment statement.

Place Statement*, **	Mean	Standard Deviation
Place 1	3.30	1.24
Place 2	3.70	1.26
Place 3	3.52	1.20
Place 4	3.49	1.31
Place 5	3.51	1.22
Place 6	3.59	1.28
Place 7	3.17	1.20
Place 8	3.15	1.20
Place 9	3.13	1.21
Place 10	3.05	1.21
Place 11	3.00	1.16
Place 12	2.89	1.16

*N=403 for all 12 statements, **Place 12 was previously reverse coded

To calculate a research participant's raw place attachment score, each of the scores from the twelve questions were summed and the summation was divided by twelve. This mean score provided each participant with an overall "place attachment score." These mean scores were used in later calculations. The average overall place attachment score, calculated by summating all participant scores and dividing by 403, was 3.29.

Environmental Ethics

The researcher used the environmental ethics instrument known as the New Ecological Paradigm model and developed by Dunlap, Van Liere, Mertig, and Jones

(2000). The NEP instrument contained fifteen total environmental ethics statements. The statements were reversed in language, as statements 1, 3, 5, 7, 9, 11, 13, and 15 were pro-environmental statements. Statements 2, 4, 6, 8, 10, 12, and 14 were negatively worded environmental statements to elicit responses opposite responses of environmental ethics and values. These seven statements were reverse coded during the data entry to enable statistical analysis. Please see Appendix A, B, C, or D and refer to the selected questions within the environmental ethics instrument of each research site survey. For the following analysis, the researcher will refer to these environmental ethics statements as Ethics 1 through Ethics 15 for ease of documentation.

The researcher calculated the frequencies related to the responses elicited per each environmental attachment statement. A percentage statistic was calculated to offer a better idea of how each response faired within the specific place attachment statement. It is worth noting that the reverse coding for the previously specified statements is already in place in these calculations.

Table 4-15: Environmental ethics statement 1 – Participant response ratios.

Ethics 1	Percentage	N
Strongly Agree	9.4	38
Agree	39.5	159
Unsure	15.6	63
Disagree	20.8	84
Strongly Disagree	14.6	59

Ethics Statement 1: We are approaching the limit of the number of people the earth can support. This statement is designed to be pro-environmental in nature, and thus elicit a positive response from individuals with a higher pro-environmental ethic philosophy. A total of 48.9% of participants responded in agreement with this statement, while only 35.4% generally disagreed.

Ethics Statement 2: Humans have the right to modify the natural environment to suit their needs. This statement is designed to elicit non-environmental friendly response, with individuals with a high pro-environmental ethic philosophy scoring lower. The researcher has already reverse-scored responses to enable further calculations. The percent of respondents that recorded pro-environmental response to this question was 39.2%, while 45.2% of respondents recorded non environmental ethic response.

Table 4-16: Environmental ethics statement 2 – Participant response ratios.

Ethics 2	Percentage	N
Strongly Agree	10.4	42
Agree	28.8	116
Unsure	15.6	63
Disagree	34.0	137
Strongly Disagree	11.2	45

Ethics Statement 3: When humans interfere with nature it often produces disastrous consequences. This statement is designed to be pro-environmental in nature, and thus elicit a positive response from individuals with a higher pro-environmental ethic philosophy. A total of 54.5% of participants responded in agreement with this statement, while only 30.1% generally disagreed.

Table 4-17: Environmental ethics statement 3 – Participant response ratios.

Ethics 3	Percentage	N
Strongly Agree	14.1	57
Agree	40.4	163
Unsure	15.4	62
Disagree	19.4	78
Strongly Disagree	10.7	43

Ethics Statement 4: Human ingenuity will insure that we do not make the earth unlivable. This statement is designed to elicit non-environmental friendly response, with individuals with a high pro-environmental ethic philosophy scoring lower. The researcher

has already reverse-scored responses to enable further calculations. The percent of respondents that recorded pro-environmental response to this question was 42.7%, while 29.8% of respondents recorded non environmental ethic response.

Table 4-18: Environmental ethics statement 4 – Participant response ratios.

Ethics 4	Percentage	N
Strongly Agree	13.4	54
Agree	29.3	118
Unsure	27.5	111
Disagree	23.6	95
Strongly Disagree	6.2	25

Ethics Statement 5: Humans are severely abusing the environment. This statement is designed to be pro-environmental in nature, and thus elicit a positive response from individuals with a higher pro-environmental ethic philosophy. A total of 63.0% of participants responded in agreement with this statement, while only 22.3% generally disagreed.

Table 4-19: Environmental ethics statement 5 – Participant response ratios.

Ethics 5	Percentage	N
Strongly Agree	24.3	98
Agree	38.7	156
Unsure	14.6	59
Disagree	15.6	63
Strongly Disagree	6.7	27

Ethics Statement 6: The earth has plenty of natural resources if we just learn how to develop them. This statement is designed to elicit non-environmental friendly response, with individuals with a high pro-environmental ethic philosophy scoring lower. The researcher has already reverse-scored responses to enable further calculations. The percent of respondents that recorded pro-environmental response to this question was 25.0%, while 55.1% of respondents recorded non environmental ethic response.

Table 4-20: Environmental ethics statement 6 – Participant response ratios.

Ethics 6	Percentage	N
Strongly Agree	4.7	19
Agree	20.3	82
Unsure	19.9	80
Disagree	28.8	116
Strongly Disagree	26.3	106

Ethics Statement 7: Plants and animals have as much right as humans to exist. This statement is designed to be pro-environmental in nature, and thus elicit a positive response from individuals with a higher pro-environmental ethic philosophy. A total of 82.1% of participants responded in agreement with this statement, while only 11.1% generally disagreed.

Table 4-20: Environmental ethics statement 7 – Participant response ratios.

Ethics 7	Percentage	N
Strongly Agree	40.2	162
Agree	41.9	169
Unsure	6.7	27
Disagree	7.9	32
Strongly Disagree	3.2	13

Ethics Statement 8: The balance of nature is strong enough to cope with the impacts of modern industrial nations. This statement is designed to elicit non-environmental friendly response, with individuals with a high pro-environmental ethic philosophy scoring lower. The researcher has already reverse-scored responses to enable further calculations. The percent of respondents that recorded pro-environmental response to this question was 42.5%, while 30.0% of respondents recorded non environmental ethic response.

Ethics Statement 9: Despite our special abilities, humans are still subject to the laws of nature. This statement is designed to be pro-environmental and elicit a positive

response from individuals with a higher pro-environmental ethic philosophy. A total of 73.9% of participants responded in agreement with this statement, while only 14.7% generally disagreed.

Table 4-21: Environmental ethics statement 8 – Participant response ratios.

Ethics 8	Percentage	N
Strongly Agree	11.7	47
Agree	30.8	124
Unsure	27.5	111
Disagree	23.8	96
Strongly Disagree	6.2	25

Table 4-22: Environmental ethics statement 9 – Participant response ratios.

Ethics 9	Percentage	N
Strongly Agree	22.8	92
Agree	51.1	206
Unsure	11.4	46
Disagree	11.7	47
Strongly Disagree	3.0	12

Ethics Statement 10: The so-called "ecological crisis" facing humankind has been greatly exaggerated. This statement is designed to elicit non-environmental friendly response, with individuals with a high pro-environmental ethic philosophy scoring lower. The researcher has already reverse-scored responses to enable further calculations. The percent of respondents that recorded pro-environmental response to this question was 39.2%, while 38.2% of respondents recorded non environmental ethic response.

Ethics Statement 11: The earth is like a spaceship with very limited room and resources. This statement is designed to be pro-environmental in nature, and thus elicit a positive response from individuals with a higher pro-environmental ethic philosophy. A total of 49.4% of participants responded in agreement with this statement, while only 31.2% generally disagreed.

Table 4-23: Environmental ethics statement 10 – Participant response ratios.

Ethics 10	Percentage	N
Strongly Agree	15.9	64
Agree	23.3	94
Unsure	22.6	91
Disagree	16.1	65
Strongly Disagree	22.1	89

Table 4-24: Environmental ethics statement 11 – Participant response ratios.

Ethics 11	Percentage	N
Strongly Agree	8.7	35
Agree	40.7	164
Unsure	19.4	78
Disagree	21.3	86
Strongly Disagree	9.9	40

Ethics Statement 12: Humans were meant to rule over the rest of nature. This statement is designed to elicit non-environmental friendly response, with individuals with a high pro-environmental ethic philosophy scoring lower. The researcher has already reverse-scored responses to enable further calculations. The percent of respondents that recorded pro-environmental response to this question was 32.2%, while 43.7% of respondents recorded non environmental ethic response.

Table 4-25: Environmental ethics statement 12 – Participant response ratios.

Ethics 12	Percentage	N
Strongly Agree	8.4	34
Agree	23.8	96
Unsure	24.1	97
Disagree	30.8	124
Strongly Disagree	12.9	52

Ethics Statement 13: The balance of nature is very delicate and easily upset. This statement is designed to be pro-environmental and elicit a positive response from individuals with a higher pro-environmental ethic philosophy. A total of 44.9% of participants responded in agreement with this statement, while only 30.5% generally disagreed.

Table 4-26: Environmental ethics statement 13 – Participant response ratios.

Ethics 13	Percentage	N
Strongly Agree	10.2	41
Agree	34.7	140
Unsure	24.6	99
Disagree	22.1	89
Strongly Disagree	8.4	34

Ethics Statement 14: Humans will eventually learn enough about how nature works to be able to control it. This statement is designed to elicit non-environmental friendly response, with individuals with a high pro-environmental ethic philosophy scoring lower. The researcher has already reverse-scored responses to enable further calculations. The percent of respondents that recorded pro-environmental response to this question was 54.1%, while 19.6% of respondents recorded non environmental ethic response.

Table 4-27: Environmental ethics statement 14 – Participant response ratios.

Ethics 14	Percentage	N
Strongly Agree	22.3	90
Agree	31.8	128
Unsure	26.3	106
Disagree	17.4	70
Strongly Disagree	2.2	9

Table 4-28: Environmental ethics statement 15 – Participant response ratios.

Ethics 15	Percentage	N
Strongly Agree	7.4	30
Agree	22.8	92
Unsure	40.2	162
Disagree	13.6	55
Strongly Disagree	15.9	64

Ethics Statement 15: If things continue on their present course, we will soon experience a major ecological catastrophe. This statement is designed to be pro-environmental in nature, and thus elicit a positive response from individuals with a higher

pro-environmental ethic philosophy. A total of 30.2% of participants responded in agreement with this statement, while only 29.5% generally disagreed.

A total of eight statements within the NEP were designed to elicit pro-environmental responses (1, 3, 5, 7, 9, 11, 13, and 15). For each of these statements, the percent of agreement with these was higher than the percent that disagree with each statement. All pro-environmental statements elicited at least a 50% agreement rate except for statement 15 (30.2%).

A total of seven statements within the NEP were designed to elicit responses that were not pro-environmental in nature (2, 4, 6, 8, 10, 12, and 14). All scores for these statements were reversed before data analysis. A higher pro-environmental percentage was evident in statements 4, 8 and 14 when compared to anti-environmental percentages for those statements. The pro-environmental scores were lower than anti-environmental scores in statements 2, 6, and 12. Statement 10, designed to elicit responses that were not pro-environmental, had a response rate of 39.2% for pro-environmental response and 38.2% for anti-environmental response.

To calculate the mean environmental score for each environmental statement, the individual participant scores were summated for each environmental statement and divided by 403. While a majority of the statements' mean scores centralized near a score of 3, four statements (5, 7, 9, and 14) attained scores statistically greater, moving the mean score for those statements closer to a score of 4.

To calculate a research participant's raw place attachment score, each of the scores from the fifteen questions were summed and the summation was divided by fifteen. This mean score provided each participant with an overall "environmental ethics

score." These mean scores were used in later calculations. The average overall environmental ethics score, calculated by summating all participant scores and dividing by 403, was 3.21.

Table 4-29: Average scores per environmental ethics statement.

New Ecological Paradigm	Mean	Standard Deviation
Ethics 1	3.08	1.25
Ethics 2	2.93	1.22
Ethics 3	3.28	1.23
Ethics 4	3.20	1.13
Ethics 5	3.58	1.20
Ethics 6	2.48	1.21
Ethics 7	4.08	1.04
Ethics 8	3.18	1.11
Ethics 9	3.79	1.02
Ethics 10	2.95	1.38
Ethics 11	3.17	1.16
Ethics 12	2.84	1.17
Ethics 13	3.16	1.14
Ethics 14	3.55	1.09
Ethics 15	2.92	1.14

*N=403 for all 15 statements **Ethics 2, 4, 6, 8, 10, 12, and 14 were previously reverse coded

Research Questions

There are two primary research objectives in this research study. The first research objective is to examine the relationship between place attachment and environmental ethics of state parks visitors and employees in Oklahoma. The second research objective is to examine the differences that may exist among recreational users of various state parks and state park land management personnel in regard to place attachment, environmental ethics, and the place attachment-environmental ethics relationship.

In an effort to achieve the research study objectives, the researcher developed seven research questions; four questions relating to place attachment and three questions

relating to environmental ethics. The following analysis will present each research question and present related statistical analysis to aid in answering the research question.

Place Attachment Research Questions

Research Question 1: What is the current status of place attachment of visitors and employees at Oklahoma's state parks? To understand the current levels of place attachment for visitors and employees at Oklahoma's state parks, the mean place attachment scores for visitors were averaged and the mean place attachment scores for employees were averaged. These aggregated average scores for visitors and employees were then analyzed for meaning. An analysis of variance (ANOVA) statistical process was used to aid in understanding the differences between the two groups.

H_0: There is no difference in place attachment, as measured by Williams and Vaske's (2003) Place Attachment Scale, between Oklahoma state parks visitors and employees.

H_A: The levels of place attachment of visitors at Oklahoma's state parks are not equal to place attachment reported by employees of Oklahoma State Parks.

The place attachment average for visitors in the state parks was 3.2286 (SD=1.06689, N=355) and for employees was 3.7674 (SD=0.75871, N=48). ANOVA were used to determine if these two groups were significantly different when comparing place attachment ratings. ANOVA showed that the two groups' place attachment ratings were significantly different ($F_{(1,401)}$ =11.444, p=0.001).

Due to the two groups having statistically significant differences in place attachment, the researcher rejects the null hypothesis and fails to reject the alternate

hypothesis. As shown in the alternate hypothesis, state park employees have higher levels of place attachment to the state park properties than do visitors to these state parks.

Table 4-29: Research Question 1 ANOVA results.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	12.271	1	12.271	11.444	.001
Within Groups	429.997	401	1.072		
Total	442.269	402			

Research Question 2: Is the level of place attachment influenced by demographic variables? To understand the influence demographic variables (set as independent variables) have on levels of place attachment (set as the dependent variable), the researcher used a multiple regression analysis using all demographic variables. The researcher then used a backward regression analysis to eliminate non-significant independent variables.

H_0: Demographic variables do not influence place attachment, as measured by standard demographic questions.

H_A: There are certain demographic variables that have greater influence on place attachment, as measured by standard demographic variables.

The researcher placed all demographic variables as independent variables and placed place attachment average per respondent as the dependent variable in a linear regression statistical package. Backward regression analysis removes the most non-significant variable in the regression equation and runs a regression analysis. This process is repeated until all remaining independent variables are significant predictors of the dependent variable. The regression analysis began with 10 predictors: visitor or staff

role, gender, Latino origin, race, time associated, education, age, income, miles, and specific role while visiting the park. Regression analysis removed the most insignificant variable repeatedly, ending with an eighth and final model.

Regression analysis offers coefficients for each independent variable so that a prediction equation is provided. It is important to note that the prediction equation does not include levels of significance for the predictors, but insignificant predictors are removed stepwise until all predictors are statistically significant. Table 4-30 shows the level of significance (p-value) for each independent variable for each regression model. Missing value denote an excluded variable.

Regression Model 1: $R^2 = 0.182$ $F_{(10,392)} = 8.697$ $p<0.001$

Place Attachment $= 2.545 + .042_{Latino} + .010_{Role1} + .117_{Role} + 0.00_{Miles} + .257_{Time} + .051_{Income} - .091_{Education} - .062_{Race} - .010_{Gender} - .057_{Age}$

Regression Model 8: $R^2 = 0.172$ $F_{(3,399)} = 27.616$ $p<0.001$

Place Attachment $= 2.439 + .055_{Role1} + .246_{Time} - .073_{Education}$

The standard error of the estimate reduced from 0.96092 (Model 1) to 0.95805 (Model 8) during the backward regression analysis. The three remaining independent variables that garnered a significance level ($p \leq 0.10$) were the role of the respondent, the time associated with the park research site and the education of the respondent. These three independent variables had a greater influence on the place attachment of research respondents than did all other measured demographic independent variables. Thus, the researcher is able to reject the null hypothesis and fail to reject the alternate hypothesis.

As shown in the alternate hypothesis, there are certain demographic variables that influence place attachment more so than other demographic variables.

Table 4-30: Researcher question 2 regression table, models 1-8.

	1	2	3	4	5	6	7	8
Latino	.910	.912	x	x	x	x	x	x
Role 1	.177	.176	.176	.141	.007	.010	.008	.003
Role 2	.613	.616	.616	.620	x	x	x	x
Miles	.821	.816	.817	x	x	x	x	x
Time	.000	.000	.000	.000	.000	.000	.000	.000
Income	.299	.298	.300	.312	.340	x	x	x
Education	.050	.050	.050	.047	.048	.078	.089	.090
Race	.266	.255	.254	.242	.234	.202	x	x
Gender	.924	x	x	x	x	x	x	x
Age	.097	.097	.094	.088	.094	.124	.181	x

Research Question 3: Is the level of place attachment influenced by respondent's environmental ethics status?

H_0: Place attachment of Oklahoma state park visitors and employees is not influenced by measured independent variables related to environmental ethics, as measured by the revised New Ecological Paradigm (Dunlap, Van Liere, Mertig, & Jones, 2003) and the Place Attachment model by Williams and Vaske (2003).

H_A: Certain independent environmental ethic variables have more influence on a respondent's place attachment, as measured by the revised New Ecological Paradigm (Dunlap, Van Liere, Mertig, & Jones, 2000) and the Place Attachment model by Williams and Vaske (2003).

The researcher placed all environmental ethics variables as independent variables and positioned place attachment average per respondent as the dependent variable in a linear regression statistical package. Backward regression analysis removes the most

non-significant variable in the regression equation and runs a regression analysis. This process repeats until all remaining independent variables are significant predictors of the dependent variable. The regression analysis began with 15 predictors; all predictors were environmental ethics statements from the New Ecological Paradigm (Dunlap, Van Liere, Mertig, & Jones, 2000).

Regression analysis removed the most insignificant variable repeatedly, ending with an twelfth and final model. Regression analysis offers coefficients for each independent variable so that a prediction equation is provided. It is important to note that the prediction equation does not include levels of significance for the predictors, but insignificant predictors are removed stepwise until all predictors are statistically significant. Table 4-31 shows the level of significance (p-value) for each independent variable for regression models one and twelve. Missing values denoted by an "x" indicates an excluded variable.

Regression Model 1: $R^2 = 0.091$ $F_{(15, 387)} = 2.576$ $p = 0.001$

Place Attachment $= 2.514 + .016_{E1} + .103_{E2} + .084_{E3} - .140_{E4} + .002_{E5} + .144_{E6} + .012_{E7} - .006_{E8} + .027_{E9} - .086_{E10} + .052_{E11} + .016_{E12} + .022_{E13} - .018_{E14} + .049_{E15}$

Regression Model 12: $R^2 = 0.081$ $F_{(4, 398)} = 8.813$ $p < 0.001$

Place Attachment $= 2.72 + .095_{E2} + .124_{E3} - .156_{E4} + .156_{E6}$

The standard error of the estimate reduced from 1.01935 (Model 1) to 1.01035 (Model 12) during the backward regression analysis. The four remaining independent variables that garnered a significant level ($p \leq 0.1$) of influence were environmental ethics statements 2, 3, 4, and 6. These four independent variables had a greater influence on the

place attachment of research respondents than did all other measured environmental ethic independent variables. Thus, the researcher is able to reject the null hypothesis and fail to reject the alternate hypothesis. As shown in the alternate hypothesis, there are certain environmental ethic variables that influence place attachment more so than other environmental ethic variables.

Table 4-31: Research question 3 environmental ethics statement significance values.

Ethics Variables	Regression Model 1	Regression Model 12
E1	.808	X
E2	.099	.074
E3	.196	.017
E4	.031	.006
E5	.981	X
E6	.010	.002
E7	.833	X
E8	.930	X
E9	.667	X
E10	.195	X
E11	.473	X
E12	.786	X
E13	.729	X
E14	.771	X
E15	.468	X

Research Question 4: Does one of the sub-dimensions of place attachment, place identity and place dependence, have greater influence on environmental ethics? To understand the influence place attachment sub-dimensions (set as independent variables) have on levels of environmental ethics (set as the dependent variable), the researcher used a multiple regression analysis using all place attachment variables. The researcher then used a backward regression analysis to eliminate non-significant independent variables.

H_0: There are no sub-dimensions within place attachment that may exert greater influence on environmental ethics when compared to the other sub-dimension.

H_A: One sub-dimension of place attachment that may exert greater influence on environmental ethics when compared to the other sub-dimension of place attachment.

The researcher placed all place attachment variables as independent variables and positioned environmental ethics average per respondent as the dependent variable in a linear regression statistical package. Backward regression analysis removes the most non-significant variable in the regression equation and runs a regression analysis. This process repeats until all remaining independent variables are significant predictors of the dependent variable. The regression analysis began with 12 predictors; all predictors were place attachment statements from Williams and Vaske's Place Attachment model (2003).

Regression analysis removed the most insignificant variable repeatedly, ending with a tenth and final model. Regression analysis offers coefficients for each independent variable so that a prediction equation is provided. It is important to note that the prediction equation does not include levels of significance for the predictors, but insignificant predictors are removed stepwise until all predictors are statistically significant. Table 4-32 shows the level of significance (p-value) for each independent variable for regression models one and ten. Missing values denoted by an "x" indicates an excluded variable.

Regression Model 1: $R^2=0.096$ $F_{(12,390)}=3.439$ $p=0.000$

Environmental Ethics $=2.569 - 0.12_{P1} - .168_{P2} + .009_{P3} - .022_{P4} + .177_{P5} + .253_{P6} - .06_{P7} + .048_{P8} - .055_{P9} - .004_{P10} - .039_{P11} + .056_{P12}$

Regression Model 10: $R^2=0.084$ $F_{(3, 399)}=12.139$ $p<0.001$

Environmental Ethics $=2.583 - .202_{P2} + .166_{P5} + .221_{P6}$

Table 4-32: Research question 4 place attachment statement significance values.

Place Attachment Variables	Regression Model 1	Regression Model 10
P1	.881	X
P2	.058	.016
P3	.902	X
P4	.784	X
P5	.000	.000
P6	.01	.005
P7	.341	X
P8	.354	X
P9	.502	X
P10	.960	X
P11	.61	X
P12	.337	X

The standard error of the estimate reduced from .80623 (Model 1) to .80239 (Model 10) during the backward regression analysis. The three remaining independent variables that garnered a significant level ($p \leq 0.1$) of influence were environmental place attachment statements 2, 5, and 6. These three independent variables had a greater influence on the environmental ethics of research respondents than did all other measured place attachment independent variables. Place attachment statements 1 through 6 were aimed at eliciting the respondent's place identity and place attachment statements 7 through 12 were aimed at eliciting the respondent's place dependence measures. As the three final significant place attachment measures were 2, 5, and 6, the final regression model reveals that the sub-dimension place identity of place attachment had a greater influence when predicting environmental ethics of the research respondents.

Thus, the researcher is able to reject the null hypothesis and fail to reject the alternate hypothesis. As stated in the alternate hypothesis, a place attachment sub-

dimension, place identity, had greater influence on environmental ethics than did the other sub-dimension, place dependence.

Environmental Ethics Research Questions

Research Question 5: What is the current status of environmental ethics of visitors and employees at Oklahoma's state parks? To understand the current levels of environmental ethics for visitors and employees at Oklahoma's state parks, the mean New Ecological Paradigm (NEP) scores for visitors were averaged and the mean NEP scores for employees were averaged. These aggregated average scores for visitors and employees were then analyzed for meaning. An analysis of variance (ANOVA) statistical process was used to aid in understanding the differences between the two groups.

H_0: There is no difference in environmental ethics, as measured by the revised New Ecological Paradigm (Dunlap, Van Liere, Mertig, & Jones, 2000), between Oklahoma state park visitors and employees.

H_A: Oklahoma state park visitors current status of environmental ethics is not equal to state park employees when measured by the revised New Ecological Paradigm (Dunlap, Van Liere, Mertig, & Jones, 2000).

The environmental ethics average rating for visitors in the state parks was 3.1977 (SD=0.87186, N=355) and for employees was 3.3292 (SD=0.47289, N=48). ANOVA were used to determine if these two groups were significantly different when comparing environmental ethics ratings. ANOVA showed that the two groups environmental ethics ratings were not significantly different ($F_{(1,401)}$=1.047, p=0.307).

Table 4-33: Research question 5 ANOVA results.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.730	1	.730	1.047	.307
Within Groups	279.602	401	.697		
Total	280.332	402			

Due to the two groups not having statistically significant differences in environmental ethics, the researcher fails to reject the null hypothesis and rejects the alternate hypothesis. As shown in the null hypothesis, there is no significant difference between state park visitors and state park employees of the measured variable environmental ethics.

Research Question 6: Is the level of environmental ethics influenced by demographic variables? To understand the influence demographic variables (set as independent variables) have on levels of environmental ethics (set as the dependent variable), the researcher used a multiple regression analysis using all demographic variables. The researcher then used a backward regression analysis to eliminate non-significant independent variables.

H_0: There is no difference in the demographic variables' influence on environmental ethics, as measured by standard demographic questions, between Oklahoma state parks visitors and employees.

H_A: There are certain demographic variables that have greater influence on environmental ethics, as measured by standard demographic variables.

The researcher placed all demographic variables as independent variables and placed environmental ethics average per respondent as the dependent variable in a linear regression statistical package. Backward regression analysis removes the most non-significant variable in the regression equation and runs a regression analysis. This process is repeated until all remaining independent variables are significant predictors of the dependent variable.

The regression analysis began with 10 predictors: visitor or staff role, gender, Latino origin, race, time associated, education, age, income, miles, and specific role while visiting the park. Regression analysis removed the most insignificant variable repeatedly, ending with a seventh and final model. Regression analysis offers coefficients for each independent variable so that a prediction equation is provided. It is important to note that the prediction equation does not include levels of significance for the predictors, but insignificant predictors are removed stepwise until all predictors are statistically significant. Table 4-33 shows the level of significance (p-value) for each independent variable for regression models 1 and 7. Missing value denoted by an "X" indicates an excluded variable.

Regression Model 1: $R^2=0.069$ $F_{(10,392)}=2.916$ $p=0.002$

$$\text{Environmental Ethics} = 3.868 - .092_{\text{Age}} + .196_{\text{Gender}} - .446_{\text{Latino}} - .003_{\text{Race}} - .069_{\text{Education}} - .05_{\text{Income}} + .04_{\text{Time}} + .001_{\text{Miles}} + .054_{\text{Role}} - .004_{\text{Role1}}$$

Regression Model 7: $R^2=0.055$ $F_{(3,399)}=7.809$ $p<0.001$

$$\text{Environmental Ethics} = 3.528 - .083_{\text{Age}} + .199_{\text{Gender}} - .087_{\text{Education}}$$

The standard error of the estimate reduced from 0.81586 (Model 1) to 0.81463 (Model 7) during the backward regression analysis. The three remaining independent variables that garnered a significance level ($p \leq 0.10$) were education, gender, and age.

Table 4-33: Research question 6 demographic significance values

	Model 1	Model 7
Latino	.155	X
Role 1	.873	X
Role	.783	X
Miles	.281	X
Income	.230	X
Education	.080	.017
Race	.952	X
Gender	.022	.018
Age	.002	.002

These three independent variables had a greater influence on the environmental ethics of research respondents than did all other measured demographic independent variables. Thus, the researcher is able to reject the null hypothesis and fail to reject the alternate hypothesis. As shown in the alternate hypothesis, there are certain demographic variables that influence environmental ethics more so than other demographic variables.

Research Question 7: Is the level of environmental ethics influenced by respondent‘s place attachment? To understand the influence place attachment (set as independent variables) has on levels of environmental ethics (set as the dependent variable), the researcher used a multiple regression analysis using all environmental ethics variables. The researcher then used a backward regression analysis to eliminate non-significant independent variables.

H_0: There is no difference in the influence place attachment has on environmental ethics, as measured by the revised New Ecological Paradigm (Dunlap, Van Liere, Mertig, & Jones, 2000) and William and Vaske's (2003) place attachment scale, between Oklahoma state parks visitors and employees.

H_A: The level of environmental ethics changes as the level of place attachment changes.

To understand the influence place attachment sub-dimensions (set as independent variables) have on levels of environmental ethics (set as the dependent variable), the researcher used a multiple regression analysis using all place attachment variables. The researcher then used a backward regression analysis to eliminate non-significant independent variables.

The researcher placed all place attachment variables as independent variables and positioned environmental ethics average per respondent as the dependent variable in a linear regression statistical package. Backward regression analysis removes the most non-significant variable in the regression equation and runs a regression analysis. This process repeats until all remaining independent variables are significant predictors of the dependent variable. The regression analysis began with 12 predictors; all predictors were place attachment statements from Williams and Vaske's Place Attachment model (2003). Regression analysis removed the most insignificant variable repeatedly, ending with a tenth and final model.

Regression analysis offers coefficients for each independent variable so that a prediction equation is provided. It is important to note that the prediction equation does not include levels of significance for the predictors, but insignificant predictors are

removed stepwise until all predictors are statistically significant. Table 4-34 shows the level of significance (p-value) for each independent variable for regression models one and ten. Missing values denoted by an "x" indicates an excluded variable.

Regression Model 1: $R^2=0.096$ $F(12,390)=3.439$ $p<0.001$

Environmental Ethics =2.569 -0.12P1 - .168P2 + .009P3 - .022P4 + .177P5 + .253P6 - .06P7 +.048P8 - .055P9 - .004P10 - .039P11 + .056P12

Regression Model 10: $R^2=0.084$ $F(3, 399) =12.139$ $p<0.001$

Environmental Ethics =2.583 - .202P2 + .166P5 + .221P6

The standard error of the estimate reduced from .80623 (Model 1) to .80239 (Model 10) during the backward regression analysis. The three remaining independent variables that garnered a significant level ($p\leq0.1$) of influence were environmental place attachment statements 2, 5, and 6. These three independent variables had a greater influence on the environmental ethics of research respondents than did all other measured place attachment independent variables. Place attachment statements 1 through 6 were aimed at eliciting the respondent's place identity and place attachment statements 7 through 12 were aimed at eliciting the respondent's place dependence measures. As the three final significant place attachment measures were 2, 5, and 6, the final regression model reveals that certain place attachment statements had a greater influence when predicting environmental ethics of the research respondents.

Thus, the researcher is able to reject the null hypothesis and fail to reject the alternate hypothesis. As stated in the alternate hypothesis, place attachment influenced respondents' environmental ethics scores.

Table 4-34: Research question 7 place attachment statement significance values.

Place Attachment Variables	Regression Model 1	Regression Model 10
P1	.881	X
P2	.058	.016
P3	.902	X
P4	.784	X
P5	.000	.000
P6	.01	.005
P7	.341	X
P8	.354	X
P9	.502	X
P10	.960	X
P11	.61	X
P12	.337	X

Chapter Summary

In this chapter, the researcher has presented the statistical analysis to understand the sampled population and data collection. The researcher also presented analysis to aid in responding to the research questions initially presented in Chapter 1. The researcher summarized instrument changes, data collection schedules and described the sample population through descriptive and frequency statistics. The researcher discussed how analysis of variance (ANOVA) and multiple linear regression was used to understand and respond to the research questions initially proposed in chapter 1. The researcher used ANOVA to differentiate statistically different groups in regards to a specific variable. Regression formulas present models to aid in the prediction of dependent variables when certain independent variables are known.

Chapter V

Findings, Conclusions, & Implications

Introduction

The five sections presented in this chapter are summary of the study, findings, conclusions, implications, and thoughts for future research. In the summary of the study, the researcher will give an overview of the entire study. The section will contain a review of the problem statements and a brief description of the instrumentation used during the inquiry. The population and sample are described and response rates are mentioned. Following the introduction, the researcher will discuss limitations and delimitations associated with the research study.

The findings section will be a review of all the findings from the data analysis and brief discussion regarding their significance. The analysis discussion will be presented in the same order as the data were presented in Chapter 4. The researcher will follow the findings section with conclusions related to the research questions. The research questions will be restated, followed by a narrative by the researcher.

The researcher will follow the conclusions with practical implications of the research study. These practical suggestions are intended to address the issues and problems raised during the entire research process. The researcher will follow each issue with possible solutions and how those solutions might be implemented. In review of the

entire research process and the information attained through the process, the researcher will then highlight opportunities to improve this research study and provide possible future research considerations that arose during the research study. The research will state why each suggestion is important for the academic field of study and rationale as to why additional research is important for the professional practitioners.

Summary of the Study

There is an increase in environmental concern (Nidumolu, Prahalad, & Rangaswami, 2009) and an increase in the polarization of personal philosophies (Abramowitz, 2010, p. 3) in the United States. These two issues, coupled with the limited scholarly research focused on the place attachment and environmental ethics relationship, presents a problem. Academic scholars do not have enough research to adequately understand the relationship between place attachment and environmental ethics, which is critical as economic strain results in various recreation opportunities being evaluated for economic and social benefit (Mitchell, 2010; Manning, 1984).

The researcher developed and conducted this research study to understand the present levels of environmental ethics and place attachment of state park users and state park employees. The ability to compare the relationship between the two theories, environmental ethics and place attachment, will assist the researcher and future scholars in understanding how the two sample groups are situated within the research variables.

The need for scholarly research related to place attachment and environmental ethics within the state park context and in review of the need to compare the two populations of visitors and employees, the researcher developed several research questions.

What is the current status of place attachment of visitors and employees at Oklahoma's state parks? Using Williams and Vaske's (2003) Place Attachment instrumentation, the researcher sought to understand the current levels of place attachment of state park visitors and state park employees. The instrument contained twelve place attachment statements, six each for the sub-dimensions of place identity and place dependence. The Likert-style instrument has a five point scale ranging from complete disagree to completely agree, and allows the respondent to choose how they feel considering the statement. The scores of the twelve individual statements are then averaged to give each participant an average "place attachment" score. The sub-dimensions were use in later calculations, but no sub-dimension average score was calculated per participant.

Is the level of place attachment influenced by demographic variables? Using the data obtained through the place attachment instrumentation, the researcher sought to understand how specific demographic variables influenced levels of place attachments as reported by research participants. Backward linear regression was used to determine the influence each demographic has upon the place attachment of the individual. Backwards linear regression was also used to eliminate non-significant variables and highlight the demographic variables that influenced place attachment the most.

What is the current status of environmental ethics of visitors and employees at Oklahoma's state parks? Using Dunlap, Van Liere, Mertig, and Jones (2000) Revised New Ecological Paradigm instrumentation, the researcher sought to understand the current levels of environmental ethics of state park visitors and state park employees. The instrument contained fifteen statements related to environmental ethics. The Likert-

style instrument has a five point scale ranging from complete disagree to completely agree, and allows the respondent to choose how they feel considering the statement. The scores of the fifteen individual statements are then averaged to give each participant an average "environmental ethics" score.

Is the level of environmental ethics influenced by demographic variables? Using the data obtained through the environmental ethics instrumentation, the researcher sought to understand how specific demographic variables influenced levels of environmental ethics as reported by research participants. Backward linear regression was used to determine the influence each demographic has upon the environmental ethics of the individual. Backwards linear regression was also used to eliminate non-significant variables and highlight the demographic variables that influenced an individual's environmental ethics the most.

Two related questions were posed next. Is the level of environmental ethics influenced by respondent's place attachment? Does one of the sub-dimensions of place attachment assert greater influence on environmental ethics? Using the data obtained through the place attachment instrumentation, the researcher sought to understand how the two known sub-dimensions of place attachment influenced levels of environmental ethics as reported by research participants. Backward linear regression was used to determine the influence each statement within the place attachment instrumentation has upon the environmental ethics of the individual. Backwards linear regression was also used to eliminate non-significant variables and highlight the place attachment statements that influenced place attachment the most. Using the place attachment statements as independent variables allows the researcher to understand how place attachment, as an

entire dimension influences environmental ethics. Also, using these statements as such allows for interpretation as to which sub-dimensions have greater influence in that the statements are directly related to one of the two sub-dimensions.

Is the level of place attachment influenced by respondent's environmental ethic status? Using the data obtained through the environmental ethics and place attachment instrumentation, the researcher sought to understand how specific environmental ethics statements influenced levels of place attachment as reported by research participants. Backward linear regression was used to determine the influence each environmental ethics statement has upon the place attachment level of the individual. Backwards linear regression was also used to eliminate non-significant variables and highlight the environmental ethics statements that influenced an individual's place attachment the most.

The researcher took samples from two populations. The first population was state park employees, which included all employee positions at the state parks chosen as research sites. The second population was state park visitors, which included all persons age 18 years and above visiting the state park for any length of time throughout the research study time-frame. All respondents were known adults, appearing to be 18 years of age or older. No approached respondents were found to be under the age of 18. Overall, 711 adults were approached to participant in the research study. A total of 403 adults completed the survey and 308 adults declined to participate or did not complete the research survey. The research participant response ratio was 56.68% (0.5668073). The response rates fluctuated between research sites, please see Table 4-2 in Chapter 4 for research site specific response rates.

Demographic Summary

In an effort to understand the typical survey respondent, it may be helpful to highlight the common respondent characteristics. In this research study, respondents were predominately white, a slight majority was men, and their education levels mostly ranged from a high school education to a Bachelor's Degree. The respondents were typically rural, their income was moderate and considered to be middle-class, and had typically held an association with the research site between 3 and 10 years. The most common user was either a day-user or an RV camper and the employee respondents were mostly non-management in their role distinction.

The researcher believes that while the U.S. Census does an accurate job capturing the complete ancestral, race, and cultural makeup of an individual, many respondents claimed to be "Native American" when in fact they might factually fall into the category of a mixed-race individual. Perhaps a better identifier in future studies is to seek out the knowledge of having a Certified Degree of Indian Blood (CDIB) and inquiring as to the actual percentage of American Indian ancestry present.

Place Attachment

The researcher used a modified version of Williams and Vaske's (2003) place attachment instrumentation, which contained two known sub-dimensions. Each sub-dimension contained six place attachment statements used to elicit agreeableness within that sub-dimension. The two sub-dimensions included are place identity and place dependence. The first six statements were within the place identity sub-dimension and generally received positive responses. Respondents chose the option of strongly agree or agree a majority of the time for each of the six statements. In general, respondents

identified strongly with the selected research site. The mean place identity score for all respondents was 3.52, meaning the respondents did have a slightly elevated level of place identity in relation to the selected research sites.

The second sub-dimension, place dependence, received a different response set, as respondent's answers were somewhat equally scattered across the five available selections. The options of strongly disagree and disagree were chosen more often, meaning that the research respondents cannot be regarded as having positive levels of place dependence. The mean place dependence for all respondents was 3.065, meaning the respondents did not have significant levels of place dependence to the research site.

Within the Williams and Vaske (2003) place attachment instrumentation, both dimensions are included in a total place attachment measurement. The average place attachment for all research respondents was 3.29, meaning the respondents did not have significant levels of place attachment to the respective research sites.

Environmental Ethics

The researcher used the revised New Ecological Paradigm (Dunlap, Van Liere, Mertig, & Jones, 2000) to elicit data related to environmental ethics. This 15 statement instrument provides an overall raw score to aid in the understanding of the respondent's environmental ethic status. During the analysis of each statement, the mean scores ranged from 2.48 to 4.08, with one statement receiving an elevated mean score of 4.08. The seventh statement, "plants and animals have as much right as humans to exist" received a mean score much higher than all other statements, in consideration of the 403 total respondents. All other statements ranged approximately ±0.5 from the neutral selection of 3. The mean environmental ethics scores for all research respondents was 3.21, meaning

the respondents did not have elevated levels of pro-environmental ethics, nor did they have elevated levels of anti-environmental ethics.

Findings

The first research question put forth inquired as to the current status of place attachment of visitors and employees at Oklahoma's state parks. Essentially, the researcher sought to understand if the level of place attachment was significantly different between two groups: state park users and state park employees. Using univariate analysis of variance (ANOVA), the researcher tested to see if there was a significant difference in place attachment average and the two population groups. ANOVA shows the two groups did significantly differ in regards to place attachment scores ($F_{(1,401)}$ =11.444, p=0.001). The average score for place attachment among visitors was 3.2286 (SD=1.06689, N=355) and for employees was 3.7674 (SD=0.75871, N=48). The researcher, using ANOVA, interprets this analysis to mean that state park employees have higher levels of place attachment to their respective state parks.

The second research question investigated the influence that selected demographic variables have on place attachment levels. The researcher used backwards linear regression to analyze independent variables and determine the level of significance for these variables. Using backwards linear regression narrowed the list of significant independent variables to three demographic variables: role, time, and education. The role variable is whether the participant is a state park visitor or a state park employee, the time variable indicates the length of time since the participant first visited the park, and education reflects the highest level of education the participant has achieved. These three variables were found to be significant in their prediction of the place attachment scores of

participants, the final regression equation is statistically significant and accounts for 17.2% of the variance (R^2=0.172, $F_{(3,399)}$ =27.616 p<0.001). Knowing and understanding the participants' scores within these three variables may help the researcher predict the place attachment levels of participants.

While not all the demographic variables were found to be significant in their influence on place attachment levels, three demographic variables were significant. The role of the participant influenced place, as the role moved from visitor to employee, the place attachment increased. A positive coefficient for time also may be interpreted so that the longer association a participant has with a specific park, the higher their place attachment score will be. Analysis did yield an unexpected result, in that as a participant's education increased, their level of attachment decreased.

The third research question investigated the influence environmental ethics scores have on participants place attachment levels. The researcher used backwards linear regression to analyze independent variables and determine the level of significance for these variables. Using backwards linear regression, the researcher narrowed the list of significant independent variables to four environmental ethics statement variables: E2, E3, E4, and E6. Statements E2, E4, and E6 were negatively worded statements used to elicit anti-environmental ethic scores, and E3 was a positively worded statement used to elicit a pro-environmental ethic score.

In the original regression formula, there were 15 independent variables, one for each of the environmental ethics statements used in the revised NEP instrument. While the initial regression formula reached statistical significance (R2 =0.091, F (15, 387) =2.576, p=0.001), not all the independent variables were significant predictors of the

place attachment score. A final model yielded the four significant independent variables and the regression formula was statistically significant (R^2 =0.081, $F_{(4, 398)}$ =8.813, $p<0.001$).

The researcher suggests that place attachment levels of respondents are influenced by environmental ethics of the individual. Increased levels of pro-environmental ethics may influence place attachment scores in a positive direction.

The fourth research question sought to understand if one of the sub-dimensions of place attachment might exert greater influence on a respondent's environmental ethics score. The researcher used backwards linear regression to analyze the independent variables and determine the level of significant for these variables. Using backwards linear regression, the researcher narrowed the list of significant independent variables to three place attachment statements: P2, P5, and P6. These three place attachment statements are all within the sub-dimension of place identity. No statements within the sub-dimension place dependence were noted in the final regression model. The initial regression model was statistically significant, but not all of the independent variables used were significant factors (R^2=0.096, $F_{(12,390)}$ =3.439, $p <0.01$). A final regression model yielded the three significant independent variables and the regression formula was statistically significant (R^2=0.084, $F_{(3, 399)}$ =12.139, $p<0.01$).

While it may be noted that the three final independent variables were considered significantly important in the regression model, it may be noted that the variable P2 received a negative coefficient, while the other two (P5, P6) received positive coefficient numbers. An example of the second place attachment statement is: "No other place can compare to Beavers Bend State Park." This statement is shown to have a negative

relationship with pro-environmental ethics. This means if a respondent's score on this statement was elevated, it would be negatively correlated to pro-environmental ethics. The researcher suggests that pro-environmental ethics within respondents is influenced by place attachment, but more so influenced by place identity, a sub-dimension of place attachment.

The fifth research question inquired as to the current status of environmental ethics of visitors and employees at Oklahoma's parks. Furthermore, the researcher wanted to know if there were significant differences in the environmental ethics levels between state park employees and state park visitors. The researcher used a previously tested instrument, the revised new ecological paradigm (Dunlap, Van Liere, Mertig, & Jones, 2000) to measure the status of environmental ethics of each research participant. The scale consisted of statements related to environmental ethics and the respondent chose the degree to which they agreed or disagreed with each statement.

The average NEP score for visitors was 3.20 and for employees the average score was 3.32. These scores are only slightly elevated, meaning they show only slight pro-environmental ethics per group. The researcher used a group of statistics known as analysis of variance to describe any significant differences in environmental ethics scores between the two groups. ANOVA reveal that no significant difference exists ($F_{(1,401)} = 1.047$, $p = 0.307$) between state park visitors and state park employees. While the average NEP scores were slightly different, ANOVA allows the researcher to say that generally, state park visitors and state park employees have similar levels of pro-environmental ethics.

The sixth research question investigated the influence that selected demographic variables have on respondent environmental ethics levels. The researcher used backwards linear regression to analyze independent variables and determine the level of significance for these variables. Using backwards linear regression narrowed the list of significant independent variables to three demographic variables: age, gender, and education.

The age variable is simply the age of the state park visitor or a state park employee, the gender variable is denoted as male or female, and education reflects the highest level of education the participant has achieved. These three variables were found to be significant in their prediction of the place attachment scores of participants, the final regression equation is statistically significant and accounts for 5.5% of the variance (R^2=0.055, $F_{(3,399)}$ =7.809 p=0.000). Knowing and understanding the participants scores within these three variables may help the researcher predict the environmental ethics levels of participants.

While not all the demographic variables were found to be significant in their influence on place attachment levels, three demographic variables were significant. The final regression equation was statistically significant (R^2=0.055, $F_{(3,399)}$ =7.809 p<0.001). The independent variables age and gender attained positive coefficients. As a person increased in age, they were more likely to have higher levels of pro-environmental ethics. Females are generally higher in pro-environmental ethics scores than were men. Analysis did yield an unexpected result, in that as a participant's education increased, their level of environmental ethics decreased. The researcher states that knowing a person's age, gender, and education level may aid in understanding their levels of environmental ethics.

The seventh research question sought to understand if place attachment influenced a respondent's environmental ethics score. The researcher used backwards linear regression to analyze the independent variables and determine the level of significant for these variables. Using backwards linear regression, the researcher narrowed the list of significant independent variables to three place attachment statements: P2, P5, and P6. The initial regression model was statistically significant, but not all of the independent variables used were significant factors (R^2=0.096, $F_{(12,390)}$ =3.439, p <0.01). A final regression model yielded the three significant independent variables and the regression formula was statistically significant (R^2=0.084, $F_{(3, 399)}$ =12.139, p<0.01).

While it may be noted that the three final independent variables were considered significantly important in the regression model, it may be noted that the variable P2 received a negative coefficient, while the other two (P5, P6) received positive coefficient numbers. An example of the second place attachment statement is: "No other place can compare to Boiling Springs State Park." This statement is shown to have a negative relationship with pro-environmental ethics. This means if a respondent's score on this statement was elevated, it would be negatively correlated to pro-environmental ethics. The researcher suggests that pro-environmental ethics within respondents is influenced by place attachment.

Conclusions

This section of the chapter will discuss the researcher's conclusions related to each research question. Specific researcher question discussion will be similar to the order of questions presented in the first chapter.

Research Question 1: What is the current status of place attachment of visitors and employees at Oklahoma's state parks? While the researcher found there were significant differences between visitors and employees, neither group attained meaningfully elevated place attachment scores. As the researcher analyzed the levels of place attachment of the two groups and differences between them, another question arose during the research. Why are Oklahomans not attached to their state parks? Unobserved and unknown variables within the research project and specific research instruments might provide insight as specific reasons place attachment is not significant with these user groups. Previous research suggests a few areas that might aid in understanding this lack of person-place bond Williams & Vaske, 2003; Hwang, Lee, & Chen, 2005; Hay, 2002).

The researcher did not find a difference between visitors and employees in regards to place attachment levels. The real concern is lack of attachment to these natural resources. Hwang, Lee, and Chen (2005) argued that user involvement has a positive and significant effect on place attachment, meaning if a user was not involved with the place in some manner, place attachment was less likely to happen. In an effort to understand place attachment in a developmental context, Hay (2002) found that historical cultural connections to places affected place attachment. Hidalgo and Hernandez (2001) also observed place attachment being strongest where social connections were also strong, meaning an element of social involvement might affect place attachment. Manzo and Perkins (2006) confirmed that planned user involvement and social and cultural experiences strengthen the place attachment of respondents.

The lack of attachment by respondents in this research study might be due to the lack of involvement in the park, and furthermore might signal that these parks are not places of significant cultural history and social structures. If the managers and administration of the parks in Oklahoma seek to strengthen bonds between visitors and the place, inquiry might be needed to understand what processes are needed to begin the development of cultural history, significant park involvement, and the concept of social structure happening within the park.

Research Question 2: Is the level of place attachment influenced by demographic variables? The researcher found that three primary demographic variables significantly influenced place attachment: the role of the respondent, the time associated with the park, and the education level of the respondent. The cultural background, race, distance from the park, income, gender, and respondent's age did not significantly influence place attachment in this study.

Brown, Perkins, and Brown (2003) found that respondents reporting Hispanic background and non-White races had higher levels of place attachment. This study did not confirm these findings, as race, ethnicity, and cultural background were not found to be significant variables in predicting place attachment. McAuley's (1998) inquiry noted that Black Oklahomans were not attached to place; other research studies have noted that White respondents have higher levels of engagement and attachment (Johnson, Crosnoe, & Elder, 2001; Kyle, Absher, & Graefe, 2003). This research study confirms McAuley's findings that Black Oklahomas are not attached to place, but does not confirm studies that state white respondents are higher in place attachment.

The finding that race, ethnicity and cultural background is not a significant predictor place attachment is positive news in that one may view this finding as a confirmation that visitors of all races, ethnicities, and cultural backgrounds are developing place attachment on relatively equal levels. The researcher disagrees and proposes that the low levels of visitation by users beyond the White and Non-Hispanic demographic groupings are a significant factor. Visitation by minority groups was extremely low during the research study and could have affected the results of the study. Furthermore, throughout other research projects, the level of visitation by minority groups is consistently lower than that of Whites. These factors must be considered when interpreting this finding.

The distance traveled by the respondent was not a significant variable in this study, which starkly disagrees with Moore and Graefe (1994) who found that rail-trail users were more attached to a place if the distance traveled to the place was lower. In confirmation that distance from home to place is not a significant factor in place attachment, Manzo (2005) found that cultural and social bonds, and not distance to the place, was a significant predictor for place attachment. In that distance traveled was not a significant factor when predicting place attachment; users that are closer to the park are not developing strong place attachment when compared to users traveling larger distances. This research study did not inquire as the visitation frequency of the users, but past studies have shown that distance is not necessarily an indicator of attachment or involvement (Syme, 2001; Hanink & White, 1999) but visitation frequency might affect attachment (Hailu, Boxall, & McFarlane, 2005). While one might postulate that visitors that travel less distance to their destination might visit Oklahoma's state park more

frequently, that is not an assumption that may be made considering the current data. The researcher suggests that, if state park management seeks to develop place attachment with visitors that are closer to the park, more information is needed to understand the lack of attachment by this group and how place attachment might be formed by local users.

Bricker and Kerstetter (2000) found that increased income and levels of expenditure had a positive effect on place attachment. Another research study found that users with lower levels of income were associated with increased place attachment to wilderness areas (Williams, Patterson, Roggenbuck, & Watson, 1992). The findings within this research study did not confirm either of these previous studies, as income level was not a significant factor in predicting place attachment. While income is not a predictor of place attachment, this finding is a positive result. Income did not affect levels of place attachment may be interpreted as users of all income levels were equal in their levels of place attachment. No income levels were overtly absent or highlighted in regards to place attachment, a signal of equality of place among various user income levels.

Hidalgo and Hernandez (2001) found that women had stronger place attachment bonds when compared to men. The results of this study do not explicitly confirm Hidalgo and Hernandez's (2001) findings that women had strong place attachment than men. More men (N=243, 603%) than women (N=160, 39.7%) participated in the research study. Due to the respondent selection process, the researcher assumes more men than women are present in the parks. Having more men utilize the parks and low place attachment levels overall might lead one to agree with the findings of Hidalgo and Hernandez (2001).

McHugh and Mings (1996) found that age affected place attachment, as a respondent's age increased, the respondents' place attachment also increased. The results of this study do not confirm McHugh and Mings' findings. In this research study, the older age brackets contained a larger percentage of the respondents. This directly disagrees with previous research. The respondents' age was much older in this research study, which should have resulted in increased place attachment. Age, however, was not a significant factor that influenced place attachment. The researcher did not expect this finding, considering age to be a possible factor in place attachment, but analysis proved otherwise. In that time association with the park is discussed later as an influential variable, the research concludes that most of the older adults using the parks are not ones that have long associations with the park, thus negating possibilities of place attachment development.

Previous research has not accurately concluded as to how influential length of attachment to a place has in place attachment levels. Rubinstein and Parmelee (1992) found that length of association was not necessarily tied to place attachment, as other factors were significant among older adults in a community in regards to attachment place. Other studies have found length of association to be significant. McCool and Martin (1994) found that length of association, in years, directly and positively influenced attachment to a community or community areas. In another study primarily focused on tourism, Williams, McDonald, Riden, and Uysal (1995) found that older adults were more attached to places of significance. In this research study, the length of association with the state park property was a significant influential variable of place attachment levels.

The time associated with the park, in years, had a direct, positive influence on place attachment, meaning that the longer a person has been associated with the park in some manner (visitation), the more likely it is that the person has increased levels of place attachment. This finding is positive news in several ways. The fact that as people's relationship with a park lengthens, their bond with the park increases is a good sign. Increased levels of place attachment are more probable for repeat visitors and for users who have longer associations with the park.

Currently, there are many programmatic efforts by outdoor recreation management and administration, in conjunction and parallel with programs to better the health of children. Many of these efforts focus on getting children and youth to visit parks and the outdoors. If such efforts are successful, the future of place attachment levels for visitors could significantly increase as the children in these programs transition to adults and senior adults.

The role of the participant, either a state park user or a state park employee was also a significant factor in predicting place attachment levels. While there is a dearth of previous research related to the comparison of these two roles, similar studies might be useful. Williams and Stewart (1998) found that management of various ecosystems found it valuable to understand the place attachment of resource users. Jorgensen and Stedman (2002) found that land ownership was a significant factor in place attachment, as a person has or perceives to have ownership of a property, levels of place attachment increased. With that, one may be able to state that a respondent filling similar roles to that of an owner such as maintenance, long-term vision for the properties, and consistent relationship with the properties might result in higher levels of place attachment. The

results of this research study would confirm such a postulation, as the role of the research participant was a significant factor when predicting place attachment. If the respondents were a park visitor of any type, lower levels of place attachment are expected. If the respondent was a park employee of any type, increased levels of place attachment are expected. While management and administration would certainly like to see increased levels of place attachment for all visitors and employees, it is a positive finding that state park employees are more attached to the parks than are visitors.

Analysis found that the level of education of a respondent was a significant factor in place attachment levels. The coefficient for this variable was negative, signaling that the education variable has a negative effect on place attachment. This means that as the education level of the respondent increases, their place attachment is likely to decrease. This confirms some previous research that suggests increased education leads to migration for various reasons, resulting in low levels of place attachment for new migrants to an area (Mesch, 1998). In conformation, another study that investigated increased education prospects for Iowa youth found similar trends, as education levels increased; participants were less attached to place and often migrated as a result (Elder, King, & Conger, 1996). While this study confirms previous research that education might not be a positive factor in place attachment levels, this negative relationship is cause for concern. Decreased attachment levels for park visitors and employees are indicators that the parks are not connecting well with users with higher levels of education. Efforts to understand why users and employees with higher levels of education are less attached might mandate more investigation and research.

In what the researcher might think of as the "perfect scenario" regarding place attachment, no selected independent variable would influence place attachment more than any other. Certain variables such as length of association in years and age might be more understandable if alone they were significant influences on place attachment. As it is, the lack of influence from several factors is a positive sign that access and activity within the state parks is equitable for Oklahomans.

In review, there are other demographic variables that might be suited for future research. Visitation frequency might aid in the understanding of the relationship between a person and the place, as Moore and Graefe (1994) found in their study. Stynes, Spotts, and Strunk (1985) found that development within a park was a significant factor when discussing place attachment. Park development levels might be an interesting variable to consider in future studies.

Research Question 3: Is the level of place attachment influenced by respondent's environmental ethics status? The researcher found that the presence of pro-environmental ethics does positively influence a respondent's level of place attachment. Overall, respondent's average score for environmental ethics was 3.21; considerably lower than 4, a marker that respondent's hold a pro-environmental ethical stance. All fifteen ethics statements were used as independent variables and four variables were found to have significant effect on the levels of place attachment. Ethics statements 2, 3, 4, and 6 all attained significant levels of influence, while ethics statements 1, 5, 7, 8, 9, 10, 11, 12, 13, 14, and 15 did not significantly influence place attachment.

When conducting a study to determine if place attachment might aid in environmental evaluation, researcher determined that place attachment did not

necessarily translate to increased or elevated levels of environmental values (Brown, Reed, & Harris, 2002). Furthermore, Kaltenborn and Bjerke (2002) found that place attachment was not a factor when asking questions about environmental problems. In this study, specific aspects of environmental ethics do influence place attachment, which means a respondent's stance in regards to environmental ethics as a personal philosophy does influence place attachment. This study does not confirm previous research explicitly, because there does seem to be some relationship between the four environmental statements and place attachment. Implicitly, the researcher does not believe that failure to confirm previous findings negates their merit. The overall levels of environmental ethics might bear further insight as to how much such factors influence place attachment. While it is important to note these significant factors as they influence environmental ethics, it is also important to question why the status of environmental ethics is low among Oklahomans. This will be addressed later in the chapter.

Research Question 4: Does one of the sub-dimensions of place attachment, place identity and place dependence, have greater influence on environmental ethics? The researcher found the sub-dimension of place identity to have a significant effect on environmental ethics, while the sub-dimension of place dependence did not have a significant effect on environmental ethics. All twelve place attachment statements were used as independent variables and three variables emerged as having significant influence related to environmental ethics, and all three of the variables represented statements (2, 5, and 6) within the sub-dimension of place identity.

Kyle, Graefe, Manning, and Bacon (2004) noticed that place identity and place dependence, two known sub-dimensions of place attachment, were related to different

values related to the environment. As trail users' place identity increased, it was more likely they viewed certain issues along trails to be more problematic. The exact opposite was true for place dependence (Kyle, Graefe, Manning, & Bacon, 2004), as the trail users' increased in levels of place dependence, certain trail issues became less problematic. This split within place attachment gives credence to continue to examine the sub-dimensions of place attachment as they relate to various other variables. Hidalgo and Hernandez (2001) also found that place dependence does not necessarily strengthen other social or personal bonds to a place as it relates to involvement and that identity and social aspects were stronger predictors of concern related to the environment.

This research confirms both of these previous studies in that place identity is the sub-dimension that affected environmental ethics levels. This research does not confirm findings that elevated levels of place dependence may affect environmental ethics levels in a negative way. This relationship between place identity and environmental ethics is important in that it provides evidence that if a state park user or employee has increased levels of place identity, they will also be pro-environmental in nature. Pro-environmental disposition may lead to better treatment of the resource and increased awareness of incorrect uses of the resource (Kyle, Graefe, Manning, & Bacon, 2004).

It might be fruitful to consider putting efforts forth to increase levels of place identity among employees and users of state parks and other natural areas. Further research is needed to determine what programmatic efforts, educational materials, possible change in operations and amenities to improve place identity.

Research Question 5: What is the current status of environmental ethics of visitors and employees at Oklahoma's state parks? The researcher did not find any

significant differences in the levels of environmental ethics between state park visitors and employees. Furthermore, the average level of environmental ethics was 3.20, a relatively low score. A score of closer to 4.00 would signal a moderate level of pro-environmental ethics. There are two troubling findings within this research question. First, the level of environmental ethics for both groups was low; signaling neither group had elevated levels of environmental ethics. This finding supports a finding by Jones and Dunlap (1992) in that environmental ethics has not changed over the last twenty years. The low levels of environmental ethics could be due to several factors, as will be discussed in a later research question.

The finding that there is no different between state park visitors and state park employees is especially troubling. While many times visitors are stewards of the environment (Kyle, Graefe, Manning, & Bacon, 2004) and bring attention to troublesome issues, state park employees are the employed caretakers of the resource. Past research has shown that having elevated levels of environmental ethics is good management practice in the corporate sector (Russo & Fouts, 1997) and for management of natural resources (Grimble & Wellard, 1997). Administration leadership might consider the lack of employee environmental ethics troubling and should pursue information to increase levels of environmental ethics among the employees working with the resource in every role.

Research Question 6: Is the level of environmental ethics influenced by demographic variables? The researcher found that three primary demographic variables significantly influenced place attachment: the age of the respondent, the gender of the respondent, and the education level of the respondent. The cultural background, race,

distance from the park, income, role of the respondent, and time associated with the park were not significant variables influencing levels of environmental ethics.

Jones (2006) as well as Mohai and Bryant (1998) found that African Americans are more likely than other races to exhibit environmental concern and have increased levels of environmental ethics. In contrast, Shultz and Zelezny (1999) found that environmental ethics were value based, and not influenced by racial or ethnic variables. In an examination of environmental beliefs, whites were found to have the highest levels of environmental ethics, followed by Asian Americans, U.S. born Latinos, African Americans, and foreign born Latinos (Johnson, Bowker, & Cordell, 2004). This research study did not confirm any previous research, in that race and cultural ethnicity were not significant influential factors when predicting environmental ethics. The researcher interprets this finding as the variables of race and ethnic background as not being factors that influence environmental ethics within the population of Oklahoma.

The distance from the park to the home for visitors was not a significant factor when predicting environmental ethics. Tremblay and Dunlap (1977) first noticed that rural residents had lower levels of environmental concern when compared to urban residents. While this research study does not explicitly confirm Tremblay and Dunlap's study, further investigation might reveal that it does not exactly negate the researcher either. As distance was not a statistically significant factor when predicting environmental ethics, there was no increase in environmental ethics as the distance traveled increased. The overall environmental ethics scores, however, are considered low before factoring in for various variables. The researcher postulates that the "rural" mindset mentioned in previous studies is more prevalent in this study due to the nature of

most Oklahomans (including urban residents) having similar mindsets and philosophies as rural residents. While this aspect was not included in the research study, if it were substantial in accuracy, environmental ethics scores would be low and distance traveled would still not appear to be an influential factor.

Jones and Dunlap (1992) found that adults living in higher income areas were consistently in more support of pro-environmental actions. These findings were confirmed in Howell and Laska's (1992) study, noting that residents of high-income urban areas also were found to have higher environmental values. Findings in this research do not support the findings of Jones and Dunlap (1992) as the income per household was not an influential factors in predicting levels of environmental ethics. This study actually confirmed previous research where Samdahl (1989) sought to test various models eliciting information relating to environmental concern, actions, and ethics. Samdahl (1989) wrote that most demographic variables are ineffective in predicting environmental concern, and included household income in that list.

The findings in this research study did not find the role of the respondents to be a significant factor in predicting levels of environmental ethics. This finding disagrees with Fransson and Garling (1999) who found that persons with more responsibility scored higher in areas of environmental concern and pro-environmental concepts.

In research related to international environmental concern, Kvaloy, Finseraas, and Listhaug (2012) found that public opinions toward environmental issues were related to policies and laws governing environmental issues, signaling that visitors' views toward environmental issues might result in how natural areas might be managed. Cho and Patten (2007) found that membership to various groups is a significant factor in

understanding a respondent's level of environmental ethics; if a person belongs to a group that is generally pro-environmental in ideology, that person will display more characteristics that may be classified as pro-environmental. Various stakeholders often feel they have a stronger ethic related to the environment and thus wish to be active voices and aid in decision-making process (Fraser, Dougill, Mabee, Reed, & McAlpine, 2006). All of these previous research studies offer evidence that the role of the respondent might affect the levels of environmental ethics of future research respondents. The findings in this research study do no support findings from previous research. The role of the respondent, as recorded within the research instrument, did not affect the levels of environmental ethics or concern.

The finding that employees do not have significantly different levels of pro-environmental concern and ethics is a finding that needs more inspection. Should the person(s) charged with maintaining natural resources have higher levels of environmental ethics? One might think so, in that persons filling such roles are charged with continual upkeep and maintenance of the property. If overall environmental ethics scores were elevated or higher than they measured in this research study, then the researcher might not be concerned with the fact that a respondent's role with the research site does not influence their environmental ethic status. The scores for environmental ethics were low, signaling both users and employees of the state parks do not have very high levels of environmental ethics, a troubling finding.

Smith and Burr (2011) found that the length of association with a resource did not affect their environmental behavior. Findings in this research study confirm this previous research, as length of association with the state park did not influence a respondent's

level of environmental ethics. Slightly more recent research by Lawrence (2012) found that length of association in fact did affect environmentally responsible behavior, as visitors that continued visiting natural areas were shown to have higher levels of environmental ethics. One would think that the visitors and employees that had initial contact with the state park might not have different levels of environmental ethics. One would think this would change as the length of association increased with visitors and employees. Perhaps due to factors such as awareness, place attachment, and so forth, one might speculate that persons with longer association with state parks would have higher levels of environmentally responsible behavior and environmental ethics. This study does not show such a trend, which might not be good news. Due to the fact the scores related to environmental ethics are low, managers of these natural resources should seek to understand why the length of association with the park and the levels of environmental ethics are not directly related.

Franzen and Meyer (2010) noted that age does not directly influence environmental attitudes, and that other significant factors in predicting environmental ethics are present. This research study does not confirm this. It does confirm research by Jones and Dunlap (1992) that found younger adults are more likely to exhibit pro-environmental behaviors and have higher levels of environmental ethics. Hood, Martin, Mclaren, and Jackson (2011) agreed, noting that youth showed strong support for environmental stewardship.

In this research study, age did show to be significant factors in predicting levels of environmental ethics. As the respondent's age increased, their levels of environmental

ethics decreased. This agrees with past studies that show younger respondents have higher scores, or studies that indicate that age is not a significant factor.

This news does not bode well for managers of different state parks and natural areas. Participants in this study increased in number in later age brackets, meaning the older ages are better represented throughout all the research sites. This may be true for other state park and similar areas in Oklahoma. This finding indicates that persons visiting state parks have lower levels of environmental ethics; this may not be a good sign for managers as older users may be preferred yet they show lower levels of environmental ethics.

In contrast to Lyons and Breakwell (1994) findings that sex was not a factor in determining environmental values and concern, findings in this research study show that sex is a factor and that women score higher in environmental ethics than do men. This confirms other research relating various demographics to environmental ethics. Mohai (1992) found that, when controlling for all known factors, women were more likely to show environmental concern than men, but found that men were substantially more likely to be involved in activism. Stern, Dietz, and Kalof (1993) confirmed that women have significantly higher rates of environmental values and concerns than do men.

These findings may also be a concern for managers of natural resources, as a majority of the researcher participants in this study were male. This finding indicates that persons visiting state parks have lower levels of environmental ethics due to the fact they are generally dominated by male visitation.

In a research study using teens as the sampled population, Lyons and Breakwell (1994) found the knowledge of environmental issues was the best predictor of

environmental concern and viewpoints. Furthermore, Howell and Laska (1992) found that education has become more relevant in understanding a person's environmental attitude than other predictors. While education was an influential factor in predicting environmental ethics in this research study, it has a negative impact, meaning as the research participant's education increased, their level of environmental ethics decreased. This finding does not confirm past studies.

Due to the sample consisting mostly of participants with high school education or a bachelor's degree, this may not be a significant issue within the state parks. In this study, the less formal education a respondent has, the less influence it has on the overall environmental ethics of the individual. In that education negatively influence the ethics score, the least amount of influence is sought.

While state park management and managing users of the resource might view this as a positive sign, it does create concern that respondents with higher levels of education do not have increased levels of environmental concern. Perhaps unknown or unmeasured variables might also influence or mediate this relationship, such information should be sought to better understand this finding.

There are more variables that were not measured in this research study but were not included in this research study. Jones and Dunlap (1992) noted that political affiliation and employment profession might influence levels of environmental ethics. Samdahl (1989) noted that ideology was a significant factor in predicting environmental attitudes and that underlying belief structures should prove to be the best factor for understanding such.

Research Question 7: Is the level of environmental ethics influenced by respondent‘s place attachment? As stated in the conclusion for research question four, the researcher found the sub-dimension of place identity to have a significant effect on environmental ethics, while the sub-dimension of place dependence did not have a significant effect on environmental ethics. All twelve place attachment statements were used as independent variables and three variables emerged as having significant influence related to environmental ethics, and all three of the variables represented statements (2, 5, and 6) within the sub-dimension of place identity.

While the three place attachment statements do have significant influence on the level of environmental ethics in respondents, the overall level of environmental ethics is not substantial and should not be viewed as “high” generally speaking. The lack of total place attachment (as stated in research question one) might be a factor in the place attachment statements not being significant in their influence regarding levels of environmental ethics. Further research is needed to determine if this lack of a relationship is common throughout other natural resource research sites.

Conclusion Summary

The place attachment status of state park visitors and state park employees is low; signaling little to no place attachment is in place for these respondent groups. While three demographic variables were shown to have significant influence on place attachment, only two were a positive correlation and each being very slight. Overall, the place attachment levels were low enough the researcher states that place attachment for all respondents in the study does not exist. There did seem to be a significant difference

between visitors and employees, but nonetheless, the overall scores were still low enough to be considered negligible.

When using statements regarding the respondent's environmental ethics status as potential factors in influencing place attachment, only four of the fifteen statements were found to have significant influence. As was with the demographic variables tested, the environmental ethics statements did not bring the level of place attachment to necessary levels for the respondent to be regarded as attached to the research site.

Overall, the respondents of the study, representing all those visiting the state parks in Oklahoma and representing the employees on site at the various parks, did not achieve scores on the selected place attachment instrumentation to be considered attached to their respective sites.

The level of environmental ethics of state park visitors and state parks employees was also low; indicating respondents did not display pro-environmental ethics in their response set.

Three demographic variables proved to have significantly influenced environmental ethics, but only one of these three had a positive correlation, meaning the level of the environmental ethics would drop when known variables were included in predicting the level of environmental ethics. The researcher believes the respondents, representing state park employees and state park visitors, do not have high enough levels of pro-environmental ethics to be considered present in their daily life.

When using statements regarding the respondent's place attachment status as potential factors influencing environmental ethics, only three statements were found to have significant influence. Place dependence did not factor into the level of

environmental ethics in the response set. All three statements were found to reside in the sub-dimension place identity. Only two of the variables had positive correlations, again, indicating that levels were low. As stated previously, the levels of environmental ethics for all respondents was low enough that the researcher cannot say any environmental ethics are present in the response set.

Implications

There are three major issues to address that arose from this research study. The three issues are low levels of place attachment, low levels of environmental ethics, and the areas of concern related to demographic variables in the state parks.

The first issue is that Oklahomans are not attached to their natural resources. Visitors and employees alike did not show attachment to the resource at the four selected researcher sites. Previous research has indicated that place grow attached to place for several reasons, including longevity of social association (Hidalgo & Hernandez, 2001), and culture (Manzo & Perkins, 2006). While the researcher refrains from stating these elements do not exist in state parks currently, it may be worth investigation to understand why Oklahomans are not attached to these state parks and how current management and administration may overcome barriers to place attachment and issues relating to low attachment levels. Other factors and untested variables may also be involved in the lack of place attachment, and such variables should be investigated for their influence in place attachment. Brown and Perkins (1992) suggest that disruption in place attachment result from relocation, community action, development, and natural disasters. Through intentional investigation, administrative and managerial roles need to understand why employees and visitors are not attached to their resources. After fully understanding why

place attachment does not exist, they should take progressive action in overcoming known barriers and eliminating known issues so that place attachment may begin forming.

The second issue is that Oklahomans do not display pro-environmental ethics on any level. Visitors and employees alike do not have environmental ethics scores that may translate to any significant levels of environmental ethics. As stated previously, Jones and Dunlap (1992) found that political affiliation, specifically with liberal and democratic associations, had a significant impact and typically resulted in increased level of environmental ethics. The researcher could not find any recent research to confirm this, especially within Oklahoma. Stern, Dietz, and Kalof (1993) found that participants only acted in an environmentally friendly way, displaying environmental ethics, when they either highly valued the resource or the consequences for not valuing the resource were large enough that they felt obliged. Stern and Dietz (1994) also found that valuing the resource lead to higher levels of environmental ethics. In this research study, the value respondents placed on the researcher sites, the natural resource was not within the inquiry instrument. The perceived value of the resource is unknown. The researcher recommends that managers of the resources begin a process to better understand why the lack of environmental ethics is present for employees and visitors. It might be worth the effort to investigate how Oklahomans valuate their natural resources and what their levels of valuation are for those resources. If the valuation of the resource is low, efforts ought to be embraced to significantly raise the valuation of the resource, state parks.

The third issue is that certain demographic variables that arose within the findings should be considered worrisome for the state parks. Most respondents in the study were

older, with senior adults (55+ years) making up a majority of the respondent pool. This may reflect the season during which data were gathered, but park visitors in Oklahoma tend to be older than the general population. Young people are not visiting the parks as often, which means they are not developing a relationship with Oklahoma's natural resources for a variety of reason. Oklahoma's population is growing younger, yet the age visiting the state parks is within the retirement bracket for most citizens. Intentional programming should be implemented to get children and youth to the parks and involved in the parks in some manner.

Most of the visitors to the state parks are male, although Oklahoma's population among sexes is relatively even. Certain barriers to visitation of females exist, and those barriers should be investigated and removed. The diversity of state park visitors in regards to race and cultural origin is non-existent and does not match the diversity of Oklahoma's general population. The state parks are not places diverse populations visit. There may be a variety of reasons for this lack of visitation by Oklahoma's diverse populations, and research is needed to understand the barriers that exists and overcoming those issues.

Future Research

Throughout this research study process, the researcher gained an understanding of where future research is warranted. Such recommendations are due to insufficient information currently available and questions that arose throughout the analysis and discussion process.

If the research study had the option of being completed online (via website) at a later date, the researcher believes the response rate would have increased, as the intrusion

during the visitor leisure time would have been minimal. The nature of the instrumentation and questions contained within the research study lends well for possible online adaptations, and thus may be an option for future research. While the response rate was 57% and considered high, the researcher did feel as though researcher inquiry interfered with respondent's leisure time and in the future such interferences should be avoided.

The process that enables place attachment to happen is not entirely understood and may exist for a variety of reasons, depending on the person, resource, and context. The researcher recommends future research to better understand the factors that affect attachment to place in Oklahoma. Such research would enable better understanding of place attachment in Oklahoma and provide a foundation for intentional actions to aid in Oklahoman's connection to place.

How Oklahomans value the state parks, the valuation of the natural resource, is unknown. Focused research to better understand the process and final valuation Oklahoma have in regards to these natural resources may aid in understanding certain characteristics of visitors. This information may also lead to better understanding of how environmental ethics of visitors may be tied to such information.

More research is needed to understand the place attachment and environmental ethics of Oklahomans. While this research study has findings that are alarming, future research may be better positioned to understand certain issues and overcome such issues due to the fact that this research study highlighted the necessary steps to take in future research.

Finally, focused investigation is needed to understand why Oklahoma's diverse populations are not visiting the parks. Research exists that may aid in understanding such, but due to Oklahoma's unique geography and racial and cultural makeup, focused inquiry is necessary. Such information must be used to address concerns related to overcoming any barriers that exists in visitation by these diverse populations.

Chapter Summary

The purpose of this research study was to understand levels of place attachment and environmental ethics of visitors and employees at Oklahoma's state parks. The researcher chose four parks to represent the four primary regions of Oklahoma. Boiling Springs State Park represented the northwest portion of Oklahoma, Quartz Mountain Nature Park represented the southwest portion of Oklahoma, Sequoyah State Park represented the northeast portion of Oklahoma and Beavers Bend State Park represented the southeast portion of Oklahoma. Upon completion, this study had 403 completed surveys from visitors and employees.

Throughout the nation, state parks are facing economic and financial hardships, and many are closing state parks, including Oklahoma (Canfield, 2011; Mitchell, 2010). As administrative and managerial decisions are made concerning possible closures of natural areas, it is important to understand what these natural areas mean to the people that visit and are employed at these sites. This study sought to understand how Oklahomans view these places as necessary and meaningful to their lives and how their stance related to environmental ethics.

Using instrumentation to elicit place attachment by Williams and Vaske (2003), the researcher sought to find out how attached respondents were to the state park they

visited at the time of the researcher. Findings indicate that Oklahomans are not attached to their natural resources and that state parks have not become a place that they identify with or depend on for their recreation needs. The reason for Oklahomans not having elevated levels of place attachment is unknown, and few variables were consistent and significant factors in predicting place attachment.

A revised and updated version (Dunlap, Van Liere, Mertig & Jones, 2000) of the New Ecological Paradigm (NEP) was used as the instrument to elicit levels of environmental ethics. Findings also indicate that Oklahomans do not have elevated levels of environmental ethics, their personal philosophies, thoughts, and actions do not indicate that they make choices that are considered to be pro-environmental or consider the environment when making ethical decisions. The reason for Oklahoma not having elevated levels of environmental ethics is unknown, and few variables were consistent and significant factor in predicting environmental ethics.

Residents of Oklahoma were not equitably represented in the survey, as Oklahoma's diverse populations were noticeably absent at the state parks during the research study. Research respondents were typically older adults, attaining a high school or undergraduate college education, and were likely to be white men.

The researcher offers future research recommendations to aid in understanding how and why Oklahomans have low levels of place attachment and environmental ethics. The researcher also offers future research recommendations to determine which barriers exist for certain populations in their state park visitation. The researcher hopes that this research offers insight as to the patterns of visitation and use by Oklahomans, and that management of these parks may use such information in a variety of ways. Oklahoma is a

beautiful place, and Oklahomans are lucky to have so many diverse and beautiful natural resources. The future of those resources in both the visitor, employee, and management roles depends on developing these resources as important places. Oklahoma state parks showcase Oklahoma heritage, history, and personality and creating place attachment bonds and creating visitors and employees with environmentally sound ethics is fundamental as these resources age into the future.

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Appendices

Appendix A: Research Instrument for Beavers Bend State Park

Internal Use Only: Time of Interview: _____ Date of Interview:_____

Hello, my name is Michael Bradley and I am conducting a research study to compare place attachment and environmental ethics of state park users. You have met the criteria for participating in this research study. There is no compensation for your participation. Would you be interested in completing a survey today, it will only take a maximum of fifteen minutes of your time. Your participation is greatly appreciated. If you would like, I can provide you with a participant information sheet.

Comparing Place Attachment and Environmental Ethics of Visitors and State Park Employees in Oklahoma

Below you will read several statements regarding your thoughts or philosophy related to the environment. Please read each statement carefully. For each statement, please circle the most appropriate answer in the space provided to the right. Please, only mark one answer per question. If you have any questions, please ask for clarification of the statement.

	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
We are approaching the limit of the number of people the earth can support.	5	4	3	2	1
Humans have the right to modify the natural environment to suit their needs.	5	4	3	2	1
When humans interfere with nature it often produces disastrous consequences	5	4	3	2	1
Human ingenuity will insure that we do not make the earth unlivable.	5	4	3	2	1
Humans are severely abusing the environment.	5	4	3	2	1
The earth has plenty of natural resources if we just learn how to develop them.	5	4	3	2	1
Plants and animals have as much right as humans to exist.	5	4	3	2	1
The balance of nature is strong enough to cope with the impacts of modern industrial nations.	5	4	3	2	1
Despite our special abilities, humans are still subject to the laws of nature.	5	4	3	2	1
The so-called "ecological crisis" facing humankind has been greatly exaggerated.	5	4	3	2	1
The earth is like a spaceship with very limited room and resources.	5	4	3	2	1

Humans were meant to rule over the rest of nature.	**5**	**4**	**3**	**2**	**1**
The balance of nature is very delicate and easily upset.	5	4	3	2	1
Humans will eventually learn enough about how nature works to be able to control it.	5	4	3	2	1
If things continue on their present course, we will soon experience a major ecological catastrophe.	5	4	3	2	1

Below you will read several statements regarding your experiences at the state park you visit. Please read each statement carefully. For each statement, please circle the most appropriate answer in the space provided to the right. Please, only mark one answer per question. If you have any questions, please ask for clarification of the statement.

	Strongly Agree	**Agree**	**Unsure**	**Disagree**	**Strongly Disagree**
I feel Beavers Bend State Park is a part of me.	5	4	3	2	1
Beavers Bend State Park is very special to me.	5	4	3	2	1
I identify strongly with Beavers Bend State Park.	5	4	3	2	1
I am very attached to Beavers Bend State Park.	5	4	3	2	1
Visiting Beavers Bend State Park says a lot about who I am.	5	4	3	2	1
Beavers Bend State Park means a lot to me.	5	4	3	2	1
Beavers Bend State Park is the best place for what I like to do.	5	4	3	2	1
No other place can compare to Beavers Bend State Park.	5	4	3	2	1
I get more satisfaction out of visiting Beavers Bend State Park than any other.	5	4	3	2	1
Doing what I do at Beavers Bend State Park is more important to me than doing it in any other place.	5	4	3	2	1
I wouldn't substitute any other area for doing the types of things I do at Beavers Bend State Park.	5	4	3	2	1
The things I do at Beavers Bend State Park I would enjoy doing just as much at a similar site.	5	4	3	2	1

Below you will read several statements regarding recommendations to help provide recreation resources for future generations. Please read each statement carefully. For each statement, please circle the most appropriate answer in the space provided to the right. Please, only mark one answer per question. If you have any questions, please ask for clarification of the statement.

	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
Provide quality jobs, career pathways, and service opportunities in outdoor recreation	5	4	3	2	1
Enhance recreational access and opportunities	5	4	3	2	1
Raise awareness of the value and benefits of the outdoors	5	4	3	2	1
Engage young people in conservation	5	4	3	2	1
Strengthen the Land and Water Conservation Fund	5	4	3	2	1
Establish urban parks and community green spaces	5	4	3	2	1
Conserve rural working farms, ranches, and forests through partnerships and incentives	5	4	3	2	1
Conserve and restore our National Parks, Wildlife Refuges, Forests, and other federal lands and waters	5	4	3	2	1
Protect and renew rivers and other waters	5	4	3	2	1
Make the federal government a more effective conservation partner	5	4	3	2	1

Below you will read several questions regarding general demographic items. Please know that no questions may identify you as a respondent and these questions are used for general research purposes. Please read each statement carefully. For each statement, please circle the most appropriate answer in the space provided to the right. Please, only mark one answer per question. If you have any questions, please ask for clarification of the statement.

Please circle the age group that you belong to:

18-24	25-34	35-44	45-54	55-64	65+

Please circle the gender that most represents you:

Male	Female

Are you of Hispanic, Latino, or Spanish origin? Please circle only one.

No	Yes, Mexican or Mexican American, or Chicano	Yes, Puerto Rican
Yes, Cuban	Yes, Other:_____	

Please select your race. Circle all that apply.

White	Korean
Black, African American, or Negro	Guamanian or Choamorro
American Indian, Alaska Native	Filipino
Asian Indian	Vietnamese
Japanese	Samoan
Native Hawaiian	Other Asian: _____
Chinese	Other Pacific Islander: _____

Please select your highest level of education.

Less than High School	Master's
High School or Equivalent	Professional Degree
Associate's	Doctorate
Bachelor's Degree	Other: _____

Please select your income in the past 12 months.

Less than $25,000	$75,000 - $99,999
$25,000 - $49,999	$100,000 - $124,999
$50,000 - $74,999	$125,000 or more

How long ago has it been since you first used this state park for recreation and leisure?

Less Than 1 Year	1-2 Years	3-5 Years	6-10 Years	11-25 Years	26-50 Years	51 or More Years

How many miles do you travel from your home to the state park you are visiting today?

Please circle the group that best defines you:

State Park Visitor - Please go to Question 10	State Park Employee - Please go to Question 11

For park visitors only: please select the group that best defines you:

Cabin Guest	Tent Camper	Day Visitor
Lodge Guest	RV Camper	Other: _____

For park employees only: please select the group that best defines you:

State Park Staff	Lodge Staff	Management
Interpretive/Nature Center	Golf Course Staff	Administration
Maintenance	Seasonal Staff	Law Enforcement

Appendix B: Research Instrument for Boiling Springs State Park

Internal Use Only: Time of Interview: _____ Date of Interview:_____

Hello, my name is Michael Bradley and I am conducting a research study to compare place attachment and environmental ethics of state park users. You have met the criteria for participating in this research study. There is no compensation for your participation. Would you be interested in completing a survey today, it will only take a maximum of fifteen minutes of your time. Your participation is greatly appreciated. If you would like, I can provide you with a participant information sheet.

Comparing Place Attachment and Environmental Ethics of Visitors and State Park Employees in Oklahoma

Below you will read several statements regarding your thoughts or philosophy related to the environment. Please read each statement carefully. For each statement, please circle the most appropriate answer in the space provided to the right. Please, only mark one answer per question. If you have any questions, please ask for clarification of the statement.

	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
We are approaching the limit of the number of people the earth can support.	5	4	3	2	1
Humans have the right to modify the natural environment to suit their needs.	5	4	3	2	1
When humans interfere with nature it often produces disastrous consequences	5	4	3	2	1
Human ingenuity will insure that we do not make the earth unlivable.	5	4	3	2	1
Humans are severely abusing the environment.	5	4	3	2	1
The earth has plenty of natural resources if we just learn how to develop them.	5	4	3	2	1
Plants and animals have as much right as humans to exist.	5	4	3	2	1
The balance of nature is strong enough to cope with the impacts of modern industrial nations.	5	4	3	2	1
Despite our special abilities, humans are still subject to the laws of nature.	5	4	3	2	1
The so-called "ecological crisis" facing humankind has been greatly exaggerated.	5	4	3	2	1
The earth is like a spaceship with very limited room and resources.	5	4	3	2	1
Humans were meant to rule over the rest of nature.	5	4	3	2	1

The balance of nature is very delicate and easily upset.	**5**	**4**	**3**	**2**	**1**
Humans will eventually learn enough about how nature works to be able to control it.	5	4	3	2	1
If things continue on their present course, we will soon experience a major ecological catastrophe.	5	4	3	2	1

Below you will read several statements regarding your experiences at the state park you visit. Please read each statement carefully. For each statement, please circle the most appropriate answer in the space provided to the right. Please, only mark one answer per question. If you have any questions, please ask for clarification of the statement.

	Strongly Agree	**Agree**	**Unsure**	**Disagree**	**Strongly Disagree**
I feel Boiling Springs State Park is a part of me.	5	4	3	2	1
Boiling Springs State Park is very special to me.	5	4	3	2	1
I identify strongly with Boiling Springs State Park.	5	4	3	2	1
I am very attached to Boiling Springs State Park.	5	4	3	2	1
Visiting Boiling Springs State Park says a lot about who I am.	5	4	3	2	1
Boiling Springs State Park means a lot to me.	5	4	3	2	1
Boiling Springs State Park is the best place for what I like to do.	5	4	3	2	1
No other place can compare to Boiling Springs State Park.	5	4	3	2	1
I get more satisfaction out of visiting Boiling Springs State Park than any other.	5	4	3	2	1
Doing what I do at Boiling Springs State Park is more important to me than doing it in any other place.	5	4	3	2	1
I wouldn't substitute any other area for doing the types of things I do at Boiling Springs State Park.	5	4	3	2	1
The things I do at Boiling Springs State Park I would enjoy doing just as much at a similar site.	5	4	3	2	1

Below you will read several statements regarding recommendations to help provide recreation resources for future generations. Please read each statement carefully. For each statement, please circle the most appropriate answer in the space provided to the right. Please, only mark one answer per question. If you have any questions, please ask for clarification of the statement.

	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
Provide quality jobs, career pathways, and service opportunities in outdoor recreation	5	4	3	2	1
Enhance recreational access and opportunities	5	4	3	2	1
Raise awareness of the value and benefits of the outdoors	5	4	3	2	1
Engage young people in conservation	5	4	3	2	1
Strengthen the Land and Water Conservation Fund	5	4	3	2	1
Establish urban parks and community green spaces	5	4	3	2	1
Conserve rural working farms, ranches, and forests through partnerships and incentives	5	4	3	2	1
Conserve and restore our National Parks, Wildlife Refuges, Forests, and other federal lands and waters	5	4	3	2	1
Protect and renew rivers and other waters	5	4	3	2	1
Make the federal government a more effective conservation partner	5	4	3	2	1

Below you will read several questions regarding general demographic items. Please know that no questions may identify you as a respondent and these questions are used for general research purposes. Please read each statement carefully. For each statement, please circle the most appropriate answer in the space provided to the right. Please, only mark one answer per question. If you have any questions, please ask for clarification of the statement.

Please circle the age group that you belong to:

18-24	25-34	35-44	45-54	55-64	65+

Please circle the gender that most represents you:

Male	Female

Are you of Hispanic, Latino, or Spanish origin? Please circle only one.

No	Yes, Mexican or Mexican American, or Chicano	Yes, Puerto Rican
Yes, Cuban	Yes, Other:_____	

Please select your race. Circle all that apply.

White	Korean
Black, African American, or Negro	Guamanian or Choamorro
American Indian, Alaska Native	Filipino
Asian Indian	Vietnamese
Japanese	Samoan
Native Hawaiian	Other Asian: _____
Chinese	Other Pacific Islander: _____

Please select your highest level of education.

Less than High School	Master's
High School or Equivalent	Professional Degree
Associate's	Doctorate
Bachelor's Degree	Other: _____

Please select your income in the past 12 months.

Less than $25,000	$75,000 - $99,999
$25,000 - $49,999	$100,000 - $124,999
$50,000 - $74,999	$125,000 or more

How long ago has it been since you first used this state park for recreation and leisure?

Less Than 1 Year	1-2 Years	3-5 Years	6-10 Years	11-25 Years	26-50 Years	51 or More Years

How many miles do you travel from your home to the state park you are visiting today?

Please circle the group that best defines you:

State Park Visitor - Please go to Question 10	State Park Employee - Please go to Question 11

For park visitors only: please select the group that best defines you:

Cabin Guest	Tent Camper	Day Visitor
Lodge Guest	RV Camper	Other: _____

For park employees only: please select the group that best defines you:

State Park Staff	Lodge Staff	Management
Interpretive/Nature Center	Golf Course Staff	Administration
Maintenance	Seasonal Staff	Law Enforcement

Appendix C: Research Instrument for Sequoyah State Park

Internal Use Only: Time of Interview: _____ Date of Interview:_____

Hello, my name is Michael Bradley and I am conducting a research study to compare place attachment and environmental ethics of state park users. You have met the criteria for participating in this research study. There is no compensation for your participation. Would you be interested in completing a survey today, it will only take a maximum of fifteen minutes of your time. Your participation is greatly appreciated. If you would like, I can provide you with a participant information sheet.

Comparing Place Attachment and Environmental Ethics of Visitors and State Park Employees in Oklahoma

Below you will read several statements regarding your thoughts or philosophy related to the environment. Please read each statement carefully. For each statement, please circle the most appropriate answer in the space provided to the right. Please, only mark one answer per question. If you have any questions, please ask for clarification of the statement.

	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
We are approaching the limit of the number of people the earth can support.	5	4	3	2	1
Humans have the right to modify the natural environment to suit their needs.	5	4	3	2	1
When humans interfere with nature it often produces disastrous consequences	5	4	3	2	1
Human ingenuity will insure that we do not make the earth unlivable.	5	4	3	2	1
Humans are severely abusing the environment.	5	4	3	2	1
The earth has plenty of natural resources if we just learn how to develop them.	5	4	3	2	1
Plants and animals have as much right as humans to exist.	5	4	3	2	1
The balance of nature is strong enough to cope with the impacts of modern industrial nations.	5	4	3	2	1
Despite our special abilities, humans are still subject to the laws of nature.	5	4	3	2	1
The so-called "ecological crisis" facing humankind has been greatly exaggerated.	5	4	3	2	1
The earth is like a spaceship with very limited room and resources.	5	4	3	2	1
Humans were meant to rule over the rest of nature.	5	4	3	2	1

The balance of nature is very delicate and easily upset.	**5**	**4**	**3**	**2**	**1**
Humans will eventually learn enough about how nature works to be able to control it.	5	4	3	2	1
If things continue on their present course, we will soon experience a major ecological catastrophe.	5	4	3	2	1

Below you will read several statements regarding your experiences at the state park you visit. Please read each statement carefully. For each statement, please circle the most appropriate answer in the space provided to the right. Please, only mark one answer per question. If you have any questions, please ask for clarification of the statement.

	Strongly Agree	**Agree**	**Unsure**	**Disagree**	**Strongly Disagree**
I feel Sequoyah State Park is a part of me.	5	4	3	2	1
Sequoyah State Park is very special to me.	5	4	3	2	1
I identify strongly with Sequoyah State Park.	5	4	3	2	1
I am very attached to Sequoyah State Park.	5	4	3	2	1
Visiting Sequoyah State Park says a lot about who I am.	5	4	3	2	1
Sequoyah State Park means a lot to me.	5	4	3	2	1
Sequoyah State Park is the best place for what I like to do.	5	4	3	2	1
No other place can compare to Sequoyah State Park.	5	4	3	2	1
I get more satisfaction out of visiting Sequoyah State Park than any other.	5	4	3	2	1
Doing what I do at Sequoyah State Park is more important to me than doing it in any other place.	5	4	3	2	1
I wouldn't substitute any other area for doing the types of things I do at Sequoyah State Park.	5	4	3	2	1
The things I do at Sequoyah State Park I would enjoy doing just as much at a similar site.	5	4	3	2	1

Below you will read several statements regarding recommendations to help provide recreation resources for future generations. Please read each statement carefully. For each statement, please circle the most appropriate answer in the space provided to the right. Please, only mark one answer per question. If you have any questions, please ask for clarification of the statement.

	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
Provide quality jobs, career pathways, and service opportunities in outdoor recreation	5	4	3	2	1
Enhance recreational access and opportunities	5	4	3	2	1
Raise awareness of the value and benefits of the outdoors	5	4	3	2	1
Engage young people in conservation	5	4	3	2	1
Strengthen the Land and Water Conservation Fund	5	4	3	2	1
Establish urban parks and community green spaces	5	4	3	2	1
Conserve rural working farms, ranches, and forests through partnerships and incentives	5	4	3	2	1
Conserve and restore our National Parks, Wildlife Refuges, Forests, and other federal lands and waters	5	4	3	2	1
Protect and renew rivers and other waters	5	4	3	2	1
Make the federal government a more effective conservation partner	5	4	3	2	1

Below you will read several questions regarding general demographic items. Please know that no questions may identify you as a respondent and these questions are used for general research purposes. Please read each statement carefully. For each statement, please circle the most appropriate answer in the space provided to the right. Please, only mark one answer per question. If you have any questions, please ask for clarification of the statement.

Please circle the age group that you belong to:

18-24	25-34	35-44	45-54	55-64	65+

Please circle the gender that most represents you:

Male	Female

Are you of Hispanic, Latino, or Spanish origin? Please circle only one.

No	Yes, Mexican or Mexican American, or Chicano	Yes, Puerto Rican
Yes, Cuban	Yes, Other:_____	

Please select your race. Circle all that apply.

White	Korean
Black, African American, or Negro	Guamanian or Choamorro
American Indian, Alaska Native	Filipino
Asian Indian	Vietnamese
Japanese	Samoan
Native Hawaiian	Other Asian: _____
Chinese	Other Pacific Islander: _____

Please select your highest level of education.

Less than High School	Master's
High School or Equivalent	Professional Degree
Associate's	Doctorate
Bachelor's Degree	Other: _____

Please select your income in the past 12 months.

Less than $25,000	$75,000 - $99,999
$25,000 - $49,999	$100,000 - $124,999
$50,000 - $74,999	$125,000 or more

How long ago has it been since you first used this state park for recreation and leisure?

Less Than 1 Year	1-2 Years	3-5 Years	6-10 Years	11-25 Years	26-50 Years	51 or More Years

How many miles do you travel from your home to the state park you are visiting today?

Please circle the group that best defines you:

State Park Visitor - Please go to Question 10	State Park Employee - Please go to Question 11

For park visitors only: please select the group that best defines you:

Cabin Guest	Tent Camper	Day Visitor
Lodge Guest	RV Camper	Other: _____

For park employees only: please select the group that best defines you:

State Park Staff	Lodge Staff	Management
Interpretive/Nature Center	Golf Course Staff	Administration
Maintenance	Seasonal Staff	Law Enforcement

Appendix D: Research Instrument for Quartz Mountain Nature Park

Internal Use Only: Time of Interview: _____ Date of Interview:_____

Hello, my name is Michael Bradley and I am conducting a research study to compare place attachment and environmental ethics of state park users. You have met the criteria for participating in this research study. There is no compensation for your participation. Would you be interested in completing a survey today, it will only take a maximum of fifteen minutes of your time. Your participation is greatly appreciated. If you would like, I can provide you with a participant information sheet.

Comparing Place Attachment and Environmental Ethics of Visitors and State Park Employees in Oklahoma

Below you will read several statements regarding your thoughts or philosophy related to the environment. Please read each statement carefully. For each statement, please circle the most appropriate answer in the space provided to the right. Please, only mark one answer per question. If you have any questions, please ask for clarification of the statement.

	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
We are approaching the limit of the number of people the earth can support.	5	4	3	2	1
Humans have the right to modify the natural environment to suit their needs.	5	4	3	2	1
When humans interfere with nature it often produces disastrous consequences	5	4	3	2	1
Human ingenuity will insure that we do not make the earth unlivable.	5	4	3	2	1
Humans are severely abusing the environment.	5	4	3	2	1
The earth has plenty of natural resources if we just learn how to develop them.	5	4	3	2	1
Plants and animals have as much right as humans to exist.	5	4	3	2	1
The balance of nature is strong enough to cope with the impacts of modern industrial nations.	5	4	3	2	1
Despite our special abilities, humans are still subject to the laws of nature.	5	4	3	2	1
The so-called "ecological crisis" facing humankind has been greatly exaggerated.	5	4	3	2	1
The earth is like a spaceship with very limited room and resources.	5	4	3	2	1
Humans were meant to rule over the rest of nature.	5	4	3	2	1

The balance of nature is very delicate and easily upset.	**5**	**4**	**3**	**2**	**1**
Humans will eventually learn enough about how nature works to be able to control it.	5	4	3	2	1
If things continue on their present course, we will soon experience a major ecological catastrophe.	5	4	3	2	1

Below you will read several statements regarding your experiences at the state park you visit. Please read each statement carefully. For each statement, please circle the most appropriate answer in the space provided to the right. Please, only mark one answer per question. If you have any questions, please ask for clarification of the statement.

	Strongly Agree	**Agree**	**Unsure**	**Disagree**	**Strongly Disagree**
I feel Quartz Mountain is a part of me.	5	4	3	2	1
Quartz Mountain is very special to me.	5	4	3	2	1
I identify strongly with Quartz Mountain.	5	4	3	2	1
I am very attached to Quartz Mountain.	5	4	3	2	1
Visiting Quartz Mountain says a lot about who I am.	5	4	3	2	1
Quartz Mountain means a lot to me.	5	4	3	2	1
Quartz Mountain is the best place for what I like to do.	5	4	3	2	1
No other place can compare to Quartz Mountain.	5	4	3	2	1
I get more satisfaction out of visiting Quartz Mountain than any other.	5	4	3	2	1
Doing what I do at Quartz Mountain is more important to me than doing it in any other place.	5	4	3	2	1
I wouldn't substitute any other area for doing the types of things I do at Quartz Mountain.	5	4	3	2	1
The things I do at Quartz Mountain I would enjoy doing just as much at a similar site.	5	4	3	2	1

Below you will read several statements regarding recommendations to help provide recreation resources for future generations. Please read each statement carefully. For each statement, please circle the most appropriate answer in the space provided to the right. Please, only mark one answer per question. If you have any questions, please ask for clarification of the statement.

	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
Provide quality jobs, career pathways, and service opportunities in outdoor recreation	5	4	3	2	1
Enhance recreational access and opportunities	5	4	3	2	1
Raise awareness of the value and benefits of the outdoors	5	4	3	2	1
Engage young people in conservation	5	4	3	2	1
Strengthen the Land and Water Conservation Fund	5	4	3	2	1
Establish urban parks and community green spaces	5	4	3	2	1
Conserve rural working farms, ranches, and forests through partnerships and incentives	5	4	3	2	1
Conserve and restore our National Parks, Wildlife Refuges, Forests, and other federal lands and waters	5	4	3	2	1
Protect and renew rivers and other waters	5	4	3	2	1
Make the federal government a more effective conservation partner	5	4	3	2	1

Below you will read several questions regarding general demographic items. Please know that no questions may identify you as a respondent and these questions are used for general research purposes. Please read each statement carefully. For each statement, please circle the most appropriate answer in the space provided to the right. Please, only mark one answer per question. If you have any questions, please ask for clarification of the statement.

Please circle the age group that you belong to:

18-24	25-34	35-44	45-54	55-64	65+

Please circle the gender that most represents you:

Male	Female

Are you of Hispanic, Latino, or Spanish origin? Please circle only one.

No	Yes, Mexican or Mexican American, or Chicano	Yes, Puerto Rican
Yes, Cuban	Yes, Other:_____	

Please select your race. Circle all that apply.

White	Korean
Black, African American, or Negro	Guamanian or Choamorro
American Indian, Alaska Native	Filipino
Asian Indian	Vietnamese
Japanese	Samoan
Native Hawaiian	Other Asian: _____
Chinese	Other Pacific Islander: _____

Please select your highest level of education.

Less than High School	Master's
High School or Equivalent	Professional Degree
Associate's	Doctorate
Bachelor's Degree	Other: _____

Please select your income in the past 12 months.

Less than $25,000	$75,000 - $99,999
$25,000 - $49,999	$100,000 - $124,999
$50,000 - $74,999	$125,000 or more

How long ago has it been since you first used this state park for recreation and leisure?

Less Than 1 Year	1-2 Years	3-5 Years	6-10 Years	11-25 Years	26-50 Years	51 or More Years

How many miles do you travel from your home to the state park you are visiting today?

Please circle the group that best defines you:

State Park Visitor - Please go to Question 10	State Park Employee - Please go to Question 11

For park visitors only: please select the group that best defines you:

Cabin Guest	Tent Camper	Day Visitor
Lodge Guest	RV Camper	Other: _____

For park employees only: please select the group that best defines you:

State Park Staff	Lodge Staff	Management
Interpretive/Nature Center	Golf Course Staff	Administration
Maintenance	Seasonal Staff	Law Enforcement

Appendix E: America's Great Outdoor Initiative

The researcher developed a Likert-style instrument, similar to the environmental ethics instrument and the place attachment instrument in design, to elicit responses from respondents regarding their agreement or disagreement on the ten core principal statements regarding securing outdoor recreation for future generations in the America's Great Outdoor (AGO) Initiative.

The AGO instrument contained ten total statements. All ten statements came directly from the initiative titles proposed in the America's Great Outdoors document (2011). The ten statements may be seen in Appendix A, B, C, or D and refer to the selected questions within the third instrument in each research site survey. For the following analysis, the researcher will refer to these outdoor initiative statements as AGO 1 through AGO 10 for ease of documentation.

The researcher calculated the frequencies related to the responses elicited per each AGO statement. A percentage statistic was calculated to offer a better idea of how each response faired within the specific AGO statement.

AGO 1	Percentage	N
Strongly Agree	9.2	37
Agree	39.2	158
Unsure	24.8	100
Disagree	12.7	51
Strongly Disagree	14.1	57

AGO 2	Percentage	N
Strongly Agree	15.4	62
Agree	51.6	208
Unsure	17.6	71
Disagree	7.7	31
Strongly Disagree	7.7	31

AGO 3	Percentage	N
Strongly Agree	29.5	119
Agree	52.6	212
Unsure	10.9	44
Disagree	4.5	18
Strongly Disagree	2.5	10

AGO 4	Percentage	N
Strongly Agree	41.7	168
Agree	50.9	205
Unsure	5.7	23
Disagree	1.2	5
Strongly Disagree	0.5	2

AGO 5	Percentage	N
Strongly Agree	18.4	74
Agree	41.4	167
Unsure	26.3	106
Disagree	8.2	33
Strongly Disagree	5.7	23

AGO 6	Percentage	N
Strongly Agree	14.1	57
Agree	44.7	180
Unsure	23.3	94
Disagree	12.2	49
Strongly Disagree	5.7	23

AGO 7	Percentage	N
Strongly Agree	11.9	48
Agree	32.8	132
Unsure	30.3	122
Disagree	12.7	51
Strongly Disagree	12.4	50

AGO 8	Percentage	N
Strongly Agree	36.0	145
Agree	49.6	200
Unsure	10.9	44
Disagree	2.0	8
Strongly Disagree	1.5	6

AGO 9	Percentage	N
Strongly Agree	46.2	186
Agree	46.4	187
Unsure	6.5	26
Disagree	1.0	4
Strongly Disagree	0.0	0

AGO 10	Percentage	N
Strongly Agree	18.1	73
Agree	30.5	123
Unsure	33.3	134
Disagree	6.7	27
Strongly Disagree	11.4	46

To calculate the mean AGO score for each AGO statement, the individual participant scores were summated for each environmental statement and divided by 403. While a majority of the statements' mean scores centralized near a score of 4, two statements (1 & 7) attained scores statistically lower, moving the mean score for those statements closer to a score of 3.

America's Great Outdoors*	Mean	Standard Deviation
AGO 1	3.17	1.195
AGO 2	3.59	1.080
AGO 3	4.02	0.899
AGO 4	4.32	0.683
AGO 5	3.59	1.058
AGO 6	3.49	1.059
AGO 7	3.19	1.181
AGO 8	4.17	0.810
AGO 9	4.38	0.652
AGO 10	3.37	1.191

*N=403 for all 10 statements

To calculate a research participant's raw score, each of the scores from the ten questions were summed and the summation was divided by ten. This mean score provided each participant with an overall "AGO score." These mean scores were used in later calculations. The average overall AGO score, calculated by summating all participant scores and dividing by 403, was 3.73.

Appendix F: Director of State Parks Inquiry Letter

Kris Marek
Division Director
Oklahoma Tourism and Recreation Department
120 North Robinson, 6th Floor
Oklahoma City, Oklahoma 73102

Dear Ms. Marek:

My name is Michael Bradley and I am a doctoral candidate at Oklahoma State University. Recently, I have worked closely with Dr. Lowell Caneday and Dr. Grace Chang in providing supports in a variety of areas in the Resource Management Plans for the state parks. I was also a member of the team that conducted visitor surveys with Dr. Lowell Caneday and Dr. Deb Jordan in 2003. While the recent work is very gratifying and I still feel it a privilege to be involved, I seek to obtain your permission to begin a new study in the state park system.

My dissertation research is slated to begin soon, and I would be honored to use the Oklahoma State Parks system for my research sites. The goal of my research is to understand the relationship between place attachment and environmental ethics. Specifically, I would like to investigate how a person's dependence and identity association with a specific place may affect their environmental ethics. I would like to seek respondents that are visitor and employees, as to note any differences between these two groups. I seek permission to use three of your state parks as research sites: Sequoyah State Park, Beavers Bend State Park, and Boiling Springs State Park. Through my personal and professional travels, I am familiar with all aspects of these parks, and they offer a geographical representation of the entire state. I seek to elicit respondents from October 1, 2011 through April 30, 2012. While I do not anticipate the process to extend beyond December 1, 2011, I would like to have the opportunity to conduct research in early spring if needed.

The research shall be approved through Oklahoma State University's Institutional Review Board, insuring proper research protocol and protection for human subjects. All information collected will be anonymous and confidential. Upon completion of the dissertation, I would be happy to provide you with a copy of the final document. Therefore, I request your and your agency's approval to contact visitors and employees at the three properties listed above. I appreciate your time and efforts on my behalf, and look forward to continuing the great relationships between OTRD and OSU. Should you have any questions, please do not hesitate to contact me.

Sincerely,

Michael Bradley
Doctoral Candidate
Oklahoma State University
180 Colvin Center
Stillwater, Oklahoma 74078
michael.bradley@okstate.edu
405.614.0974

Lowell Caneday, Ph.D.
Regents Professor
Oklahoma State University
180 Colvin Center
Stillwater, Oklahoma 74078
lowell.caneday@okstate.edu
405.744.5503

Appendix G: Director of State Parks Approval Letter

OKLAHOMA TOURISM & RECREATION DEPARTMENT

[redacted]

November 7, 2011

Michael Bradley
Doctoral Candidate
Oklahoma State University
180 Colvin Center
Stillwater, Oklahoma 74078

RE: Dissertation Research

Dear Mr. Bradley:

Your request to conduct research at Sequoyah, Beavers Bend and Boiling Springs State Park relative to the preparation of your dissertation is approved. I understand you have a survey instrument that will be used and that you will make direct contact with park users in the park setting in order to request participation.

We ask that you coordinate with the park managers at each of these facilities so that the manager is aware whenever you are in the park working. Your goal of better understanding the relationship between place attachment and environmental ethics is interesting to us and we look forward to seeing the results of your work.

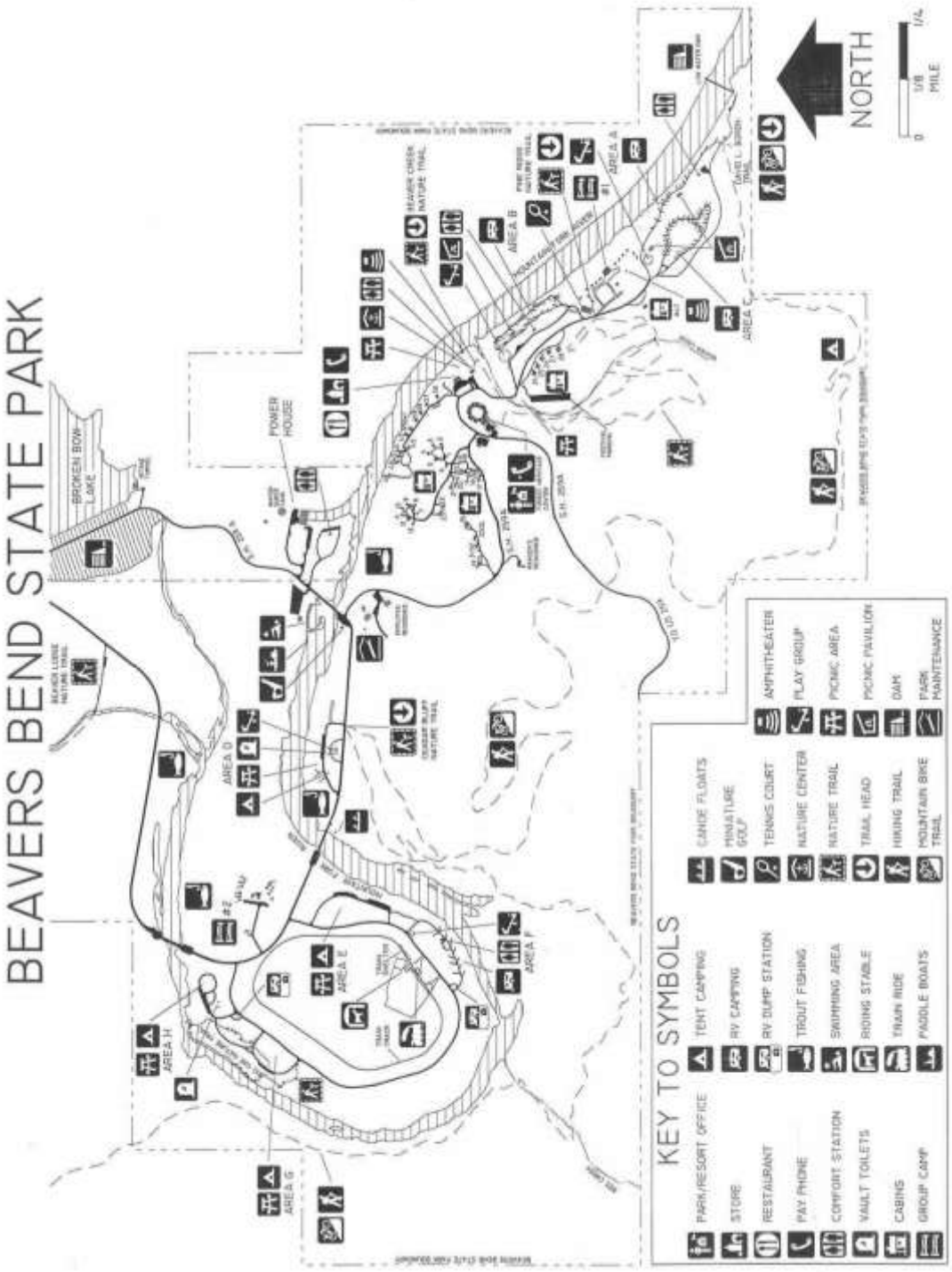
Sincerely,

Kris Marek, Director
Oklahoma State Parks

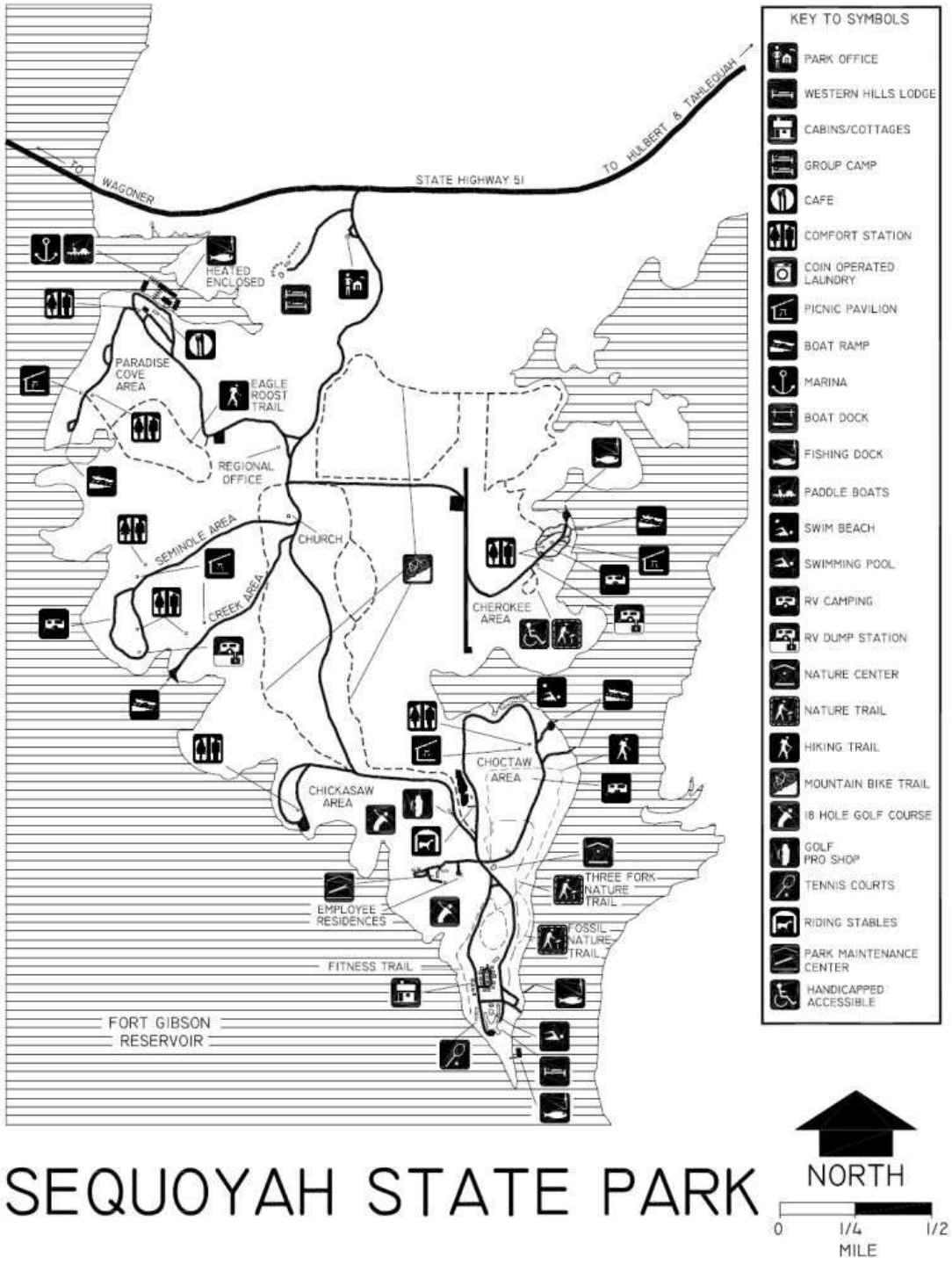
Attachments

C: Tony Presley, Sequoyah Park Manager
Jim Miller, Beavers Bend Park Manager
CD Perkins, Boiling Springs Park Manager
Lowell Caneday, PhD OSU

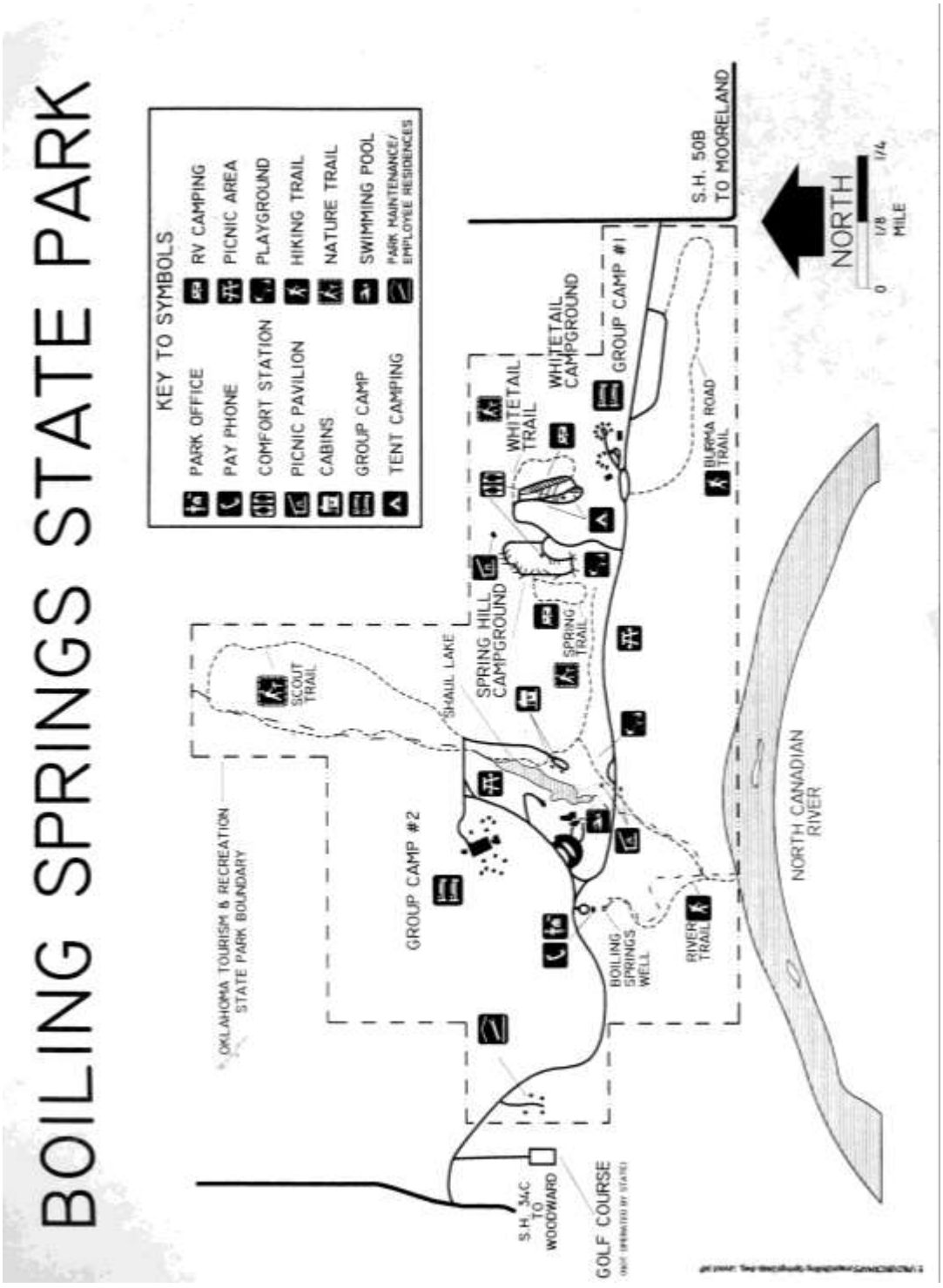
Appendix H: Map of Beavers Bend State Park



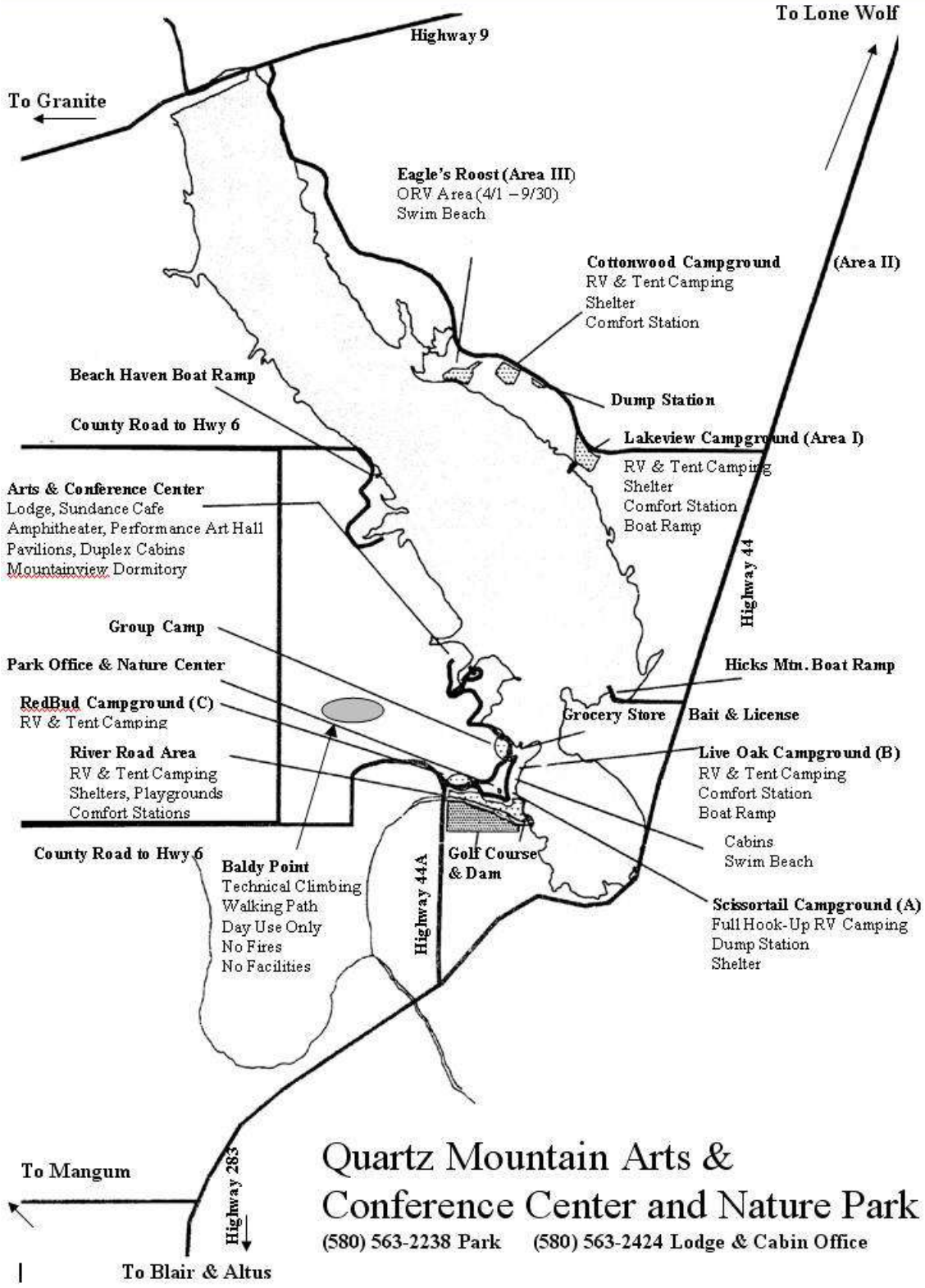
Appendix I: Map of Sequoyah State Park



Appendix J: Map of Boiling Springs State Park



Appendix K: Map of Quartz Mountain Nature Park



Appendix L: Beavers Bend State Park Thank You Letter

Michael Bradley
Research Assistant
Oklahoma State University
180 Colvin Center
Stillwater, Oklahoma 74078
February 9, 2012

Jim Miller
State Park Manager
Beavers Bend State Park
PO Box 10
Broken Bow, Oklahoma 74728

Dear Mr. Miller:

I am writing to express my gratitude for allowing me the opportunity to use Beavers Bend State Park as a research site for my dissertation research project.

As my research has progressed, I have become more aware of how lucky I have been to have selected such wonderful research sites. Every park I included in my research has afforded me great opportunities to meet park staff, visit beautiful places, and learn a lot about the visitors to the state parks.

I am proud to say that all the staff members I talked to while at Beavers Bend State Park were professional, courteous, and genuine. I thoroughly enjoyed meeting many of the people that make opportunities at state parks possible. Please tell all your staff that they were wonderfully accommodating and that their professionalism and commitment to service allowed me to complete my research in an effective and efficient manner. I really do look forward to visiting Beavers Bend State Park again soon.

At this point, I have concluded my data collection at the various research sites and will begin data analysis soon. I want to thank you one final time for allowing me to use your park as a research site. Should you have any questions, please contact me.

Sincerely,

Michael J. Bradley
Doctoral Candidate

Appendix M: Sequoyah State Park Thank You Letter

Michael Bradley
Research Assistant
Oklahoma State University
180 Colvin Center
Stillwater, Oklahoma 74078
February 9, 2012

Tony Presley.
State Park Manager
Sequoyah State Park
17131Park 10
Hulbert, Oklahoma 74441

Dear Mr. Presley:

I am writing to express my gratitude for allowing me the opportunity to use Sequoyah State Park as a research site for my dissertation research project.

As my research has progressed, I have become more aware of how lucky I have been to have selected such wonderful research sites. Every park I included in my research has afforded me great opportunities to meet park staff, visit beautiful places, and learn a lot about the visitors to the state parks.

I am proud to say that all the staff members I talked to while at Sequoyah State Park were professional, courteous, and genuine. I thoroughly enjoyed meeting many of the people that make opportunities at state parks possible. Please tell all your staff that they were wonderfully accommodating and that their professionalism and commitment to service allowed me to complete my research in an effective and efficient manner. I really do look forward to visiting Sequoyah State Park again soon.

At this point, I have concluded my data collection at the various research sites and will begin data analysis soon. I want to thank you one final time for allowing me to use your park as a research site. Should you have any questions, please contact me.

Sincerely,

Michael J. Bradley
Doctoral Candidate

Appendix N: Boiling Springs State Park Thank You Letter

Michael Bradley
Research Assistant
Oklahoma State University
180 Colvin Center
Stillwater, Oklahoma 74078
February 9, 2012

CD Perkins
State Park Manager
Boiling Springs State Park
207745 Boiling Springs Road
Woodward, Oklahoma 73801

Dear Mr. Perkins:

I am writing to express my gratitude for allowing me the opportunity to use Boiling Springs State Park as a research site for my dissertation research project.

As my research has progressed, I have become more aware of how lucky I have been to have selected such wonderful research sites. Every park I included in my research has afforded me great opportunities to meet park staff, visit beautiful places, and learn a lot about the visitors to the state parks.

I am proud to say that all the staff members I talked to while at Boiling Springs State Park were professional, courteous, and genuine. I thoroughly enjoyed meeting many of the people that make opportunities at state parks possible. Please tell all your staff that they were wonderfully accommodating and that their professionalism and commitment to service allowed me to complete my research in an effective and efficient manner. I really do look forward to visiting Boiling Springs State Park again soon.

At this point, I have concluded my data collection at the various research sites and will begin data analysis soon. I want to thank you one final time for allowing me to use your park as a research site. Should you have any questions, please contact me.

Sincerely,

Michael J. Bradley
Doctoral Candidate

Appendix O: Quartz Mountain Nature Park Thank You Letter

Michael Bradley
Research Assistant
Oklahoma State University
180 Colvin Center
Stillwater, Oklahoma 74078
February 9, 2012

Terry Mosely
Executive Director
Quartz Mountain Nature Park
43393 Scissortail Road
Lone Wolf, Oklahoma 73655

Dear Dr. Mosely:

I am writing to express my gratitude for allowing me the opportunity to use Quartz Mountain Nature Park as a research site for my dissertation research project.

As my research has progressed, I have become more aware of how lucky I have been to have selected such wonderful research sites. Every park I included in my research has afforded me great opportunities to meet park staff, visit beautiful places, and learn a lot about the visitors to the state parks.

I am proud to say that all the staff members I talked to while at Quartz Mountain were professional, courteous, and genuine. I thoroughly enjoyed meeting many of the people that make opportunities at state parks possible. Please tell all your staff that they were wonderfully accommodating and that their professionalism and commitment to service allowed me to complete my research in an effective and efficient manner. I really do look forward to visiting Quartz Mountain again soon.

At this point, I have concluded my data collection at the various research sites and will begin data analysis soon. I want to thank you one final time for allowing me to use your park as a research site. Should you have any questions, please contact me.

Sincerely,

Michael J. Bradley
Doctoral Candidate

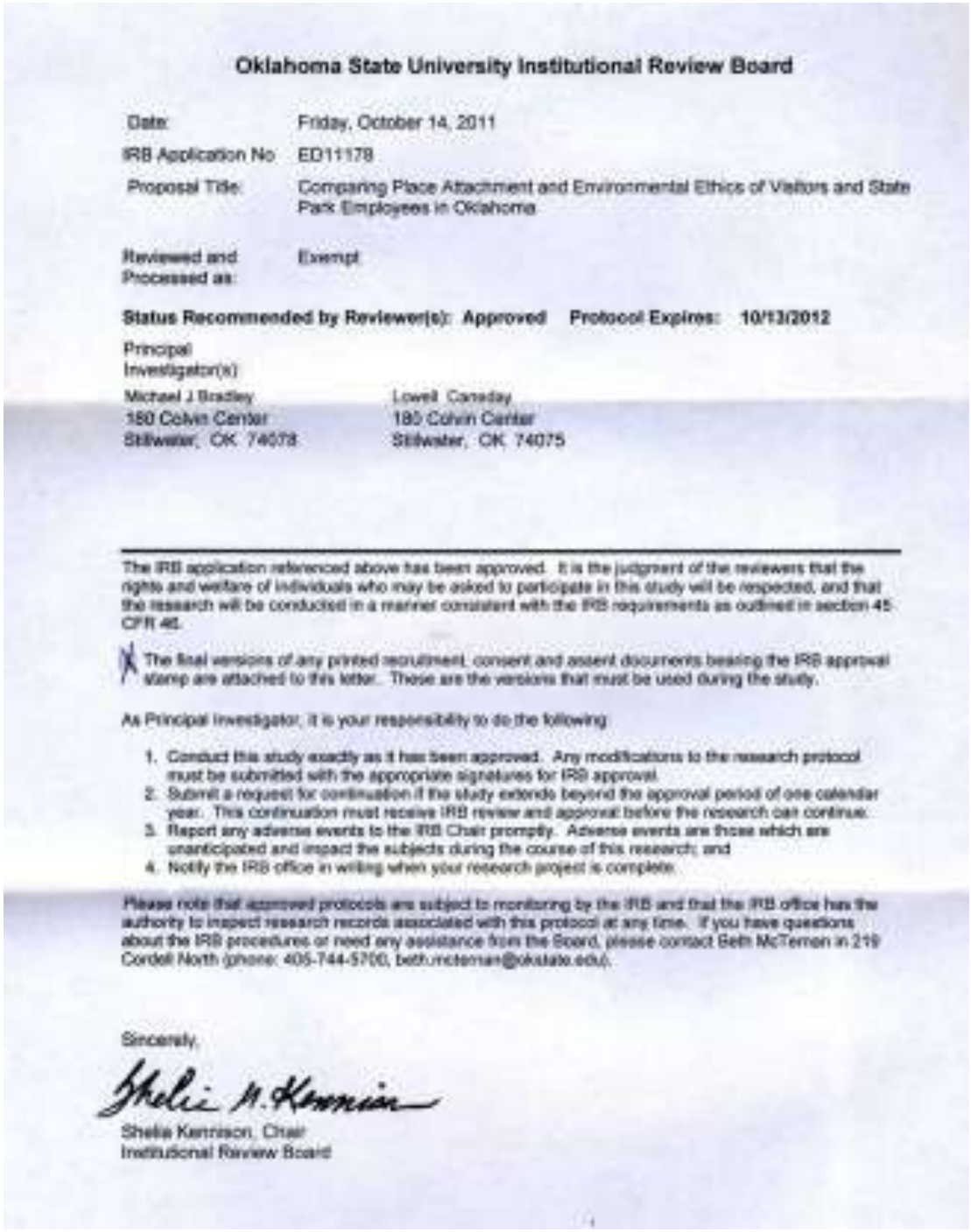
Appendix P: Place attachment statements 1-6 response ratios

	Percentage	N
Place 1		
Strongly Agree	11.4	46
Agree	50.1	202
Unsure	6.5	26
Disagree	20.6	83
Strongly Disagree	11.4	46
Place 2		
Strongly Agree	27.5	111
Agree	46.9	189
Unsure	2.7	11
Disagree	13.9	56
Strongly Disagree	8.9	36
Place 3		
Strongly Agree	17.1	69
Agree	50.6	204
Unsure	8.7	35
Disagree	14.4	58
Strongly Disagree	9.2	37
Place 4		
Strongly Agree	21.8	88
Agree	45.4	183
Unsure	4.0	16
Disagree	17.9	72
Strongly Disagree	10.9	44
Place 5		
Strongly Agree	19.4	78
Agree	46.2	186
Unsure	10.4	42
Disagree	14.6	59
Strongly Disagree	9.4	38
Place 6		
Strongly Agree	23.6	95
Agree	48.1	194
Unsure	2.7	11
Disagree	15.1	61
Strongly Disagree	10.4	42

Appendix Q: Place attachment statements 7-12 response ratios

	Percentage	N
Place 7		
Strongly Agree	11.7	47
Agree	37.2	150
Unsure	18.1	73
Disagree	22.8	92
Strongly Disagree	10.2	41
Place 8		
Strongly Agree	10.9	44
Agree	35.7	144
Unsure	22.6	91
Disagree	19.1	77
Strongly Disagree	11.7	47
Place 9		
Strongly Agree	9.4	38
Agree	40.0	161
Unsure	16.4	66
Disagree	22.3	90
Strongly Disagree	11.9	48
Place 10		
Strongly Agree	9.2	37
Agree	36.0	145
Unsure	18.6	75
Disagree	23.6	95
Strongly Disagree	12.7	51
Place 11		
Strongly Agree	7.7	31
Agree	32.8	132
Unsure	23.6	95
Disagree	24.1	97
Strongly Disagree	11.9	48
Place 12		
Strongly Agree	8.9	36
Agree	22.1	89
Unsure	30.8	124
Disagree	25.1	101
Strongly Disagree	13.2	53

Appendix R: IRB Approval



Oklahoma State University Institutional Review Board

Date: Friday, October 14, 2011

IRB Application No: ED11178

Proposal Title: Comparing Place Attachment and Environmental Ethics of Visitors and State Park Employees in Oklahoma

Reviewed and Processed as: Exempt

Status Recommended by Reviewer(s): Approved Protocol Expires: 10/13/2012

Principal Investigator(s):

Michael J Bradley
180 Colvin Center
Stillwater, OK 74078

Lowell Caneday
180 Colvin Center
Stillwater, OK 74075

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

X The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 219 Cordell North (phone: 405-744-5700, beth.mcternan@okstate.edu).

Sincerely,

Sheila K. Kennison

Sheila Kennison, Chair
Institutional Review Board

VITA

Michael Joshua Bradley

Candidate for the Degree of Doctor of Philosophy

Dissertation: COMPARING PLACE ATTACHMENT AND ENVIRONMENTAL ETHICS OF VISITORS AND STATE PARK EMPLOYEES IN OKLAHOMA

Major Field: Health, Leisure, & Human Performance

Education:

Completed the requirements for the Doctor of Philosophy in Health, Leisure, and Human Performance at Oklahoma State University, Stillwater, Oklahoma in May, 2012.

Completed the requirements for the Master of Science in Recreation, Park, & Tourism Administration at Western Illinois University, Macomb, Illinois in 2008..

Completed the requirements for the Bachelor of Science in Leisure Studies at Oklahoma State University, Stillwater, Oklahoma in 2005.

Name: Michael Joshua Bradley Date of Degree: May, 2012

Institution: Oklahoma State University Location: Stillwater, Oklahoma

Title of Study: COMPARING PLACE ATTACHMENT AND ENVIRONMENTAL ETHICS OF VISITORS AND STATE PARK EMPLOYEES IN OKLAHOMA

Pages in Study: 236 Candidate for the Degree of Doctor of Philosophy

Major Field: Health, Leisure and Human Performance

Scope and Method of Study: This research examines the relationship between place attachment and environmental ethics of state parks visitors and employees in Oklahoma. Furthermore, this research also examines differences that may exist among recreational users of various state parks and state park land management personnel concerning place attachment, environmental ethics, and the place attachment-environmental ethics relationship. For this study, the researcher used two instruments, each used to elicit input related to place attachment and environmental ethics respectively. The researcher included standard demographic questions to aid in analysis and understanding.

Findings and Conclusions: Via paper and pencil quantitative questionnaires, the researcher approached 711 employees and visitors in the state parks. There were 403 respondents representing users and employees from four state parks in Oklahoma, resulting in a 57% response rate. Place attachment scores for visitors and employees (3.23, 3.77) were slightly above a negligible score and significantly different from each other ($F_{(1,401)}$ =11.444, p=0.001). Environmental Ethics scores for visitors and employees (3.12, 3.33) were slightly above a negligible score and were not significantly different from each other ($F_{(1,401)}$=1.047, p=0.307). Only three demographic factors aided in predicting place attachment, these factors were role of the respondent, time associated with the park, and level of education of the respondent. Only three demographic factors aided in predicting environmental ethics, these factors were age of the respondent, sex of the respondent, and education level of the respondent. Knowing the levels of environmental ethics aided in understanding the place attachment of a respondent, with four environmental ethics variables (2, 3, 4, & 6) being significant in place attachment prediction ($F_{(4, 398)}$ =8.813, p<0.001). Knowing the levels of place attachment aided in understanding the environmental ethics of a respondent, with three place attachment variables (2, 5, & 6) being significant in place attachment prediction ($F_{(3, 399)}$ =12.139, p<0.001). Findings indicate that state park visitors and employees are not attached to place nor have elevated levels of environmental ethics. Findings also indicate that visitors and employee demographic makeup does not reflect the demographics of the general population of Oklahoma.

ADVISER'S APPROVAL: Lowell M. Caneday, Ph.D.